DEPARTMENT OF THE ARMY
BLUE GRASS ARMY DEPOT
431 BATTLEFIELD MEMORIAL HIGHWAY
RICHMOND, KENTUCKY 40475-5060

November 2, 2015

Environmental Office

Commonwealth of Kentucky
Department for Environmental Protection
Division of Waste Management
Attn: Ms. April Webb, Hazardous Waste Branch Manager
200 Fair Oaks Lane
Frankfort, Kentucky 40601

Subject: Class 2 Hazardous Waste Storage & Treatment Permit Modification Request,
Treaty Sampling Operations, Mustard Agent (H) Items
Blue Grass Army Depot, Richmond, Kentucky,
EPA ID # KY8-213-820-105, AI2805

Dear Ms. Webb:

Enclosed, for your review and approval, is a Resource Conservation and Recovery Act (RCRA) Class 2 Hazardous Waste Storage & Treatment Permit Modification Request to perform Treaty Sampling Operations of Mustard Agent (H) Items and an updated part A (Module I) for the permit renewal application.

Mustard agent (H)-filled projectiles and Department of Transportation (DOT) bottles that are currently stored at the Blue Grass Army Depot (BGAD) will be treated using the Explosive Destruction Technology (EDT) at the Blue Grass Chemical Agent–Destruction Pilot Plant (BGCAPP) facility. Sampling and analysis of agent from a select number of these munitions and DOT bottles (Treaty items) is required by a commitment under the Chemical Weapons Convention (CWC) Treaty to provide confirmation of the type of chemical agent being destroyed.

Treaty items received into the EDT service magazine will be segregated and held in the EDT service magazine until near the end of the H-filled projectile campaign. The treaty items (H-filled projectiles and DOT bottles) will be managed and sampled in in accordance with the CWC Treaty requirements.

The treaty sampling operation for H items will be located in the chemical limited area (CLA). Assembled Chemical Weapons Alternative (ACWA)–BGCAPP will provide oversight of this operations. Sampling will be conducted by Edgewood Chemical Biological Center (ECBC) in a glovebox inside a General Purpose Operations Shelter (GPOS) under engineering controls. The sample analysis will be conducted at a mobile ECBC laboratory adjacent to the GPOS. The treaty items will be moved in an enhanced onsite container (EONC) from the EDT service magazine or directly from a chemical Hazardous Waste Storage Unit (HWSU)/igloo to the GPOS.

The treaty sampling operation will last approximately 14 work days. The number of munitions allowed in the GPOS will be limited to the number of rounds to be processed in one day. Once sampled, the munitions and DOT bottles will be sealed, decontaminated, monitored and returned in an EONC either to the EDT service magazine or directly to the EDT for processing.

This RCRA permit application/modification request describes the transportation and sampling of the treaty items (agent (H) filled projectiles and DOT bottles). It has been prepared as a separate module, part of BGAD's RCRA permit application and is being submitted to meet the requirements of Kentucky Revised Statute 224.50-130. Since the operation involves chemical weapons processing, it will be

confined to the CLA. The current permit and the recently submitted renewal application in a modular format already addresses a majority of the applicable requirements. Therefore, where applicable, reference was made to respective parts of the previously submitted renewal application modules.

If you have any questions or require additional information, please do not hesitate to contact Mr. Todd Williams, ACWA-BGCAPP Environmental Manager, at (859) 625-6264, or Mr. Ramesh Melarkode, BGAD Environmental Manager, at (859) 779-6268.

Sincerely,

Jeff Brubaker
Site Project Manager
ACWA-BGCAPP
Operator

Lee G. Hudson
Colonel, US Army
Commanding
Owner

Copies Furnished:
Dale Burton, KDEP-DWM
Ramesh Melarkode, BGAD
LTC Andrew Morgan, BGCA
Jeff Brubaker, PEO ACWA
Todd Williams, PEO ACWA

Kentucky Natural Resources and Environmental Protection Cabinet
Department for Environmental Protection
Division of Waste Management
14 Reilly Road - Frankfort, Kentucky 40601

DO NOT WRITE IN THIS SPACE

Part A of the Kentucky Hazardous Waste Permit Application

Facility's EPA ID No.	K	Y	8	2	1	3	8	2	0	1	0	5

FOR OFFICIAL USE ONLY

Fee Submitted: $ Receipt No.: Date:

☐ FIRST SUBMITTAL *(see INSTRUCTIONS)* **X** REVISION PAGE 1 OF 15

☐ RENEWAL

1. Name of Facility: BLUE GRASS ARMY DEPOT

2. Location of Facility: 431 BATTLEFIELD MEMORIAL HIGHWAY

City: RICHMOND State: KY Zip Code: 40475-5060

3. County: MADISON *See INSTRUCTIONS:* Latitude: 37º42'00"N Longitude: 84º12'30"W

4. Name of Land Owner: *See INSTRUCTIONS:* U.S. DEPARTMENT OF THE ARMY

Legal status of Land Owner: ☒ Federal (F) ☐ State (S) ☐ County (C) ☐ Indian (I)

☐ Municipal (M) ☐ District (D) ☐ Private (P)

☐ Other (O) specify: _____

3. Land Owner's Mailing Address: 431 BATTLEFIELD MEMORIAL HIGHWAY

City: RICHMOND State: KY Zip Code: 40475-5001

Facility Land Owner's Telephone Number: (859) 779-6246

5. Existing Facilities, provide the date operation began or construction commenced: 1941
(Month, Day, Year)

New Facilities, provide the date operation is expected to begin: H sampling operaitons (page 9) : 12/31/2016
(Month, Day, Year)

6. Facility Mailing Address: SAME AS LAND OWNER'S MAILING ADDRESS

City: _____ State: _____ Zip Code: _____

7. Facility Contact Person: MR. RAMESH MELARKODE

Title: CHIEF, ENVIRONMENTAL DIVISION Phone Number: (859) 779-6268

Facility Contact Person may be reached at ☐ Mailing Address ☒ Location Address ☐ Other Specify: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Facility's EPA ID Number											
K	Y	8	2	1	3	8	2	0	1	0	5

8. Name of Facility Operator: *See INSTRUCTIONS:* U.S. DEPARTMENT OF THE ARMY

Type of Owner: [X] Federal (F) [ ] State (S) [ ] County (C) [ ] Indian (I)

[ ] Municipal (M) [ ] District (D) [ ] Private (P)

[ ] Other (O) specify: _____

Operator's Mailing Address: SAME AS LAND OWNER'S MAILING ADDRESS ABOVE

City: _____ State: _____ Zip Code: _____

Facility Operator's Telephone Number: (859) 779-6246

New Operator Assumed Responsibility for Facility on this Date: [References BGAD/BGCA/ACWA operator, SEE PAGEs 12-14]

9. Name of Facility Owner: *See INSTRUCTIONS*: U.S. DEPARTMENT OF THE ARMY

Legal status of Land Owner: [X] Federal (F) [ ] State (S) [ ] County (C) [ ] Indian (I)

[ ] Municipal (M) [ ] District (D) [ ] Private (P)

[ ] Other (O) specify: _____

Owner's Mailing Address: SAME AS MAILING ADDRESS ABOVE

City: _____ State: _____ Zip Code: _____

Facility Owner's Telephone Number: (859) 779-6246

New Operator Assumed Responsibility for Facility on this Date: 1941
(Month, Day, Year)

10. SIC Codes: (1) 9711 (2) _____ (3) _____ (4) _____

Briefly describe the type of business conducted at this site: NATIONAL SECURITY (U.S. ARMY)

_____

_____

_____

_____

_____

BGAD OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All nits Listed Under This Name	Unit of Measure	Number Of Individual nits In This Process	Operating Status Code	Description Of Process
3	Storage Container Igloo B402	PI	S01	16000.00	G	1	OP	Storage of Waste Other than Chemical Munitions Items.
3	Storage Container Igloo B404	PI	S01	16000.00	G	1	OP	Storage of Waste Other than Chemical Munitions Items.
4	Storage Igloos (B608, B612, G108, G109)	IT	S01	0.00	N/A	4	CC	Igloos that previously contained hazardous waste. Clean Closed 4-20-1999
3	Open Detonation	IS	X01	4.5	N	1	OP	Open detonation of munitions and reactive waste.
3	Open Burning (1) & (2)	IS	X01	6.0	N	2	OP	Open burning of munitions and reactive waste.
3	Molten Salt Destruction Unit, Building 575	IT	X99	0.00	N/A	1	CC	Building that previously contained hazardous waste. Clean Closed 3-30-2011
3	Confined Detonation Chamber	IS	X99	5.1	N	1	OP	Detonation of explosive material in an enclosed structure. It is not associated with chemical demilitarization.

BGCA OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Container Storage I	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage J	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage K	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage L	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage M	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 1 - 3%); Treatment as defined by KRS 224.50-130
4	Container Storage N	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 2 – 3%) Treatment as defined by KRS 224.50-130
4	Container Storage O	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 4%) Treatment as defined by KRS 224.50-130
4	Container Storage P	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage Q	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage R	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130

BGCA OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Container Storage S	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage T	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 4%) Treatment as defined by KRS 224.50-130
4	Container Storage U	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage V	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage W	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage X	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage Y	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage Z	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage AB	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 2 – 3%) Treatment as defined by KRS 224.50-130

BGCA OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Container Storage CD	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB, VX and/or H; (estimate 3 - 5%); Storage of waste chemical items in support of storage and de-mil mission; Operations to support storage and de-mil mission. Treatment as defined by KRS 224.50-130
4	Container Storage EF	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage GH	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%) Treatment as defined by KRS 224.50-130
4	Container Storage IJ	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 3 - 6%); Treatment as defined by KRS 224.50-130
4	Container Storage KL	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 2 - 3%) Treatment as defined by KRS 224.50-130
4	Container Storage MN	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate (3 -5%); Treatment as defined by KRS 224.50-130
4	Container Storage OP	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage QR	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 1 - 3%); Treatment as defined by KRS 224.50-130
4	Container Storage ST	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 1 - 3%); Treatment as defined by KRS 224.50-130

BGCA OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Container Storage UV	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage WX	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 2 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage YZ	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 1 - 4%); Treatment as defined by KRS 224.50-130
4	Container Storage ZA	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 1 - 3%); Treatment as defined by KRS 224.50-130
4	Container Storage YB	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 2 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage XC	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 2 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage WD	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 2 -5%); Treatment as defined by KRS 224.50-130
4	Container Storage VE	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage UF	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage TG	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130

BGCA OPERATOR

Facility's EPA ID Number KY821320105

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Container Storage SH	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, VX , (estimate 1 - 3%); Treatment as defined by KRS 224.50-130
4	Container Storage RI	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB, (estimate 3 – 5%); Treatment as defined by KRS 224.50-130
4	Container Storage QJ	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, GB , (estimate 3 - 5%); Treatment as defined by KRS 224.50-130
4	Container Storage PK	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, H , (estimate 5 - 6%) Treatment as defined by KRS 224.50-130
4	Container Storage OL	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, H , (estimate 5 - 6%) Treatment as defined by KRS 224.50-130
4	Container Storage NM	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items and DOT Bottle, H, (estimate 5 - 8%) Treatment as defined by KRS 224.50-130
4	Container Storage MN (H)	PI	S01 T04 [2]	3831.00	G	1	OP	Storage of Chemical Munitions Items, H , (estimate 1 - 2%) Treatment as defined by KRS 224.50-130
4	Container Storage LO	PI	S01, T04 [2]	3831.00	G	1	OP	Storage of waste from the management of chemical munitions, chemical container, items in support of storage and de-mil mission. (Operations Decontamination, PPE, M67 Motor Assembly and/or components, munition components, empty SFT, etc.),(estimate 1 - 2%); Treatment as defined by KRS 224.50-130
4	Container Storage KP	RQ	S01, T04 [2]	3831.00	G	1	CN	Storage of waste from the management of chemical munitions, chemical container, items in support of storage and de-mil mission. (Operations Decontamination, PPE, M67 Motor Assembly and/or components, munition components, empty SFT, etc.),(estimate 1 - 2%); Treatment as defined by KRS 224.50-130

ACWA-BGCAPP OPERATOR

Facility's EPA ID Number

K Y 8 2 1 3 8 2 0 1 0 5

11. PROCESS DESCRIPTION. ***See Instructions***

Commercial Indicator	Unique Unit or Group Name	Legal Status Code	Process Codes	Process Design Capacity Of All Units Listed Under This Name	Unit of Measure	Number Of Individual Units In This Process	Operating Status Code	Description Of Process
4	Sampling Facility for Mustard Agent (H) items; Movement of chemical munitions to the sampling facility, glove box, and General Purpose Operations Shelter	PI	T04 [2]	4.4	U	1	BC	Management of Mustard agent items in support of Treaty and de-mil requirements/mission. Operation to include but not limited to movement, drilling, sampling, plugging, and over-packing. Operation will be performed in a General Purpose Operations Shelter (GPOS), within a glove box, under engineering controls. U=gallons per day base on agent (Est Design 4 items/day X 11.7 lbs. per round @10.59 lbs/gallon = 4.4 gallons/day DOT bottles are 14.75 lbs @ 10.59 lbs/gallon = 1.39 gallons/day) [X 2 bottles=2.78gallon/day] Treatment as defined by KRS 224.50-130; to include manual or mechanical handling of the chemical agent compounds containing items..
4	Movement of mustard fill agent items from EDT service Magazine or Chemical HWSU to the Mustard (H) Sampling Facility, and movement from sampling site to EDT or EDT service Magazine.	PR	T04 [2]	318.4	U	1	CN	Movement of mustard fill agent items from EDT service Magazine or Chemical HWSU to the Mustard (H) Sampling Facility and movement from sampling Facility to EDT or EDT service Magazine. Transportation will occur during daylight hours on any given day. The EONCs are designed to contain a maximum of 72 H filled projectiles. A maximum of 4 EONCs would be transported during daylight hours on any given day to support H sampling operations with up to 4 items/EONC. The unit of measure "U" is the total design value for the ENOC. U=gallons per day base on agent (Est Design: 72 rounds/day X 11.7 lbs. per round @10.59 lbs/gallon = 79.6 gallons/day/ENOC; for a maximum of 4 ENOC/day X 79.6 =318.4 gallon/day). *T04 [2:]: Treatment as defined by KRS 224.50-130 for manual or mechanical handling, separation of munitions components, handling, movement or overpacking of containers or munitions containing chemical agents (GB, VX, and H).*

Facility's EPA ID Number: KY8213820105

12. WASTE STREAM DESCRIPTION. ***See Instructions.***

WASTE STREAM NUMBER	ESTIMATE ANNUAL WASTE AMOUNT	UNIT OF MEASURE	EPA WASTE NUMBERS	PROCESS CODES ASSOCIATED WITH THIS WASTE
1	30.0	**TONS**	K045(Module II)	S01 Explosive contaminated granular activated charcoal.
2	2000.0	**TONS**	D003, K044(Module II)	S01 Explosive sludge contaminated filters
3	5.0	**TONS**	D004, D005, D006, D007, D008, and/or D009 (Module II)	S01 Baghouse dust from Detonation Chamber
4	150.0	**TONS**	D006, D007, and/or D008 (Module II)	S01 Sandblast media from de-rusting operations
5	2700.0	**TONS**	D003,D006, D007, and/or D008 (Module II)	S01 Explosive ammunition and related components
6	5.0	**TONS**	K047 (Module II)	S01 Pink/red water from manufacturing and process of explosive
7	0.5	**TONS**	D007, N001, N002, and/or N003 (Module III)	S01, and/or T04 [2] Agent contaminated carbon filters with Whetlerite.
8	2.0	**TONS**	D007 (Module III)	S01 Expired carbon filters with Whetlerite.
9	1.0	**TONS**	D001, D002, D003, D004, D011, D018, D022, D035, D036, D037, D039, D040, D043, U002, U044, U103, U127, U154, U165, U131, U210, F001, F002, F003, F004, N001, N002 and/or N003 (Module III)	S01, and/or T04 [2] Laboratory wastes
10	425.0	**TONS**	D001, D003, D004, D009, D011, D012, D030, N001, and/or N002 (Module III)	S01, and/or T04 [2] Explosive components
11	90.0	**TONS**	D001, D003, D004, D008, D009, N001, N002 and/or N003 (Module III)	S01, and/or T04 [2] Explosive components
12	0.5	**TONS**	N001, N002, and/or N003 (Module III)	S01, and/or T04 [2] Agent contaminated debris
13	2.5	**TONS**	D002, N001, N002 and/or N003 (Module III)	S01, and/or T04 [2] Spent decontamination waste
14	0.5	**TONS**	D002 (Module III)	S01 Expired decontamination waste
15	2.0	**TONS**	N001,N002, and/or N003 (Module III)	S01, and/or T04 [2] Agent exposed PPE

12. WASTE STREAM DESCRIPTION. ***See Instructions.***

WASTE STREAM NUMBER	ESTIMATE ANNUAL WASTE AMOUNT	UNIT OF MEASURE	EPA WASTE NUMBERS	PROCESS CODES ASSOCIATED WITH THIS WASTE
16	1.0	**TONS**	D003, N001, N002, and/or N003 (Module III)	S01, and/or T04 [2] Agent exposed reactive materials
17	425.0	**TONS**	D003, D005, D008, N001, and/or N002 (Module III)	S01, and/or T04 [2] Chemical agent munitions (non-explosive components)
18	90.0	**TONS**	D003, D005, D008, N003 (Module III)	S01, and/or T04 [2] H-Mustard projectiles
19	2.5	**TONS**	D003, and/or N001 (Module III)	S01, and/or T04 [2] GB leaker reactive waste
20	0.0	**TONS**	N001 (Module III)	S01, and/or T04 [2] GB containers
21	0.5	**TONS**	N002, and/or N003 (Module III)	S01, and/or T04 [2] VX and H-mustard DOT bottles
22	0.5	**TONS**	D001,D006,D007,D018,D035, D039,F001,F002,F003,F004, and/or F005 (Module II)	S01, Paint waste and related material.
23	35.0	**TONS**	D002,D004-D011 and/or N001 (Module III)	S01, and/or T04 [2] GB decontamination waste
24	194.0[3]	**TONS**	K044, D003, D001, D005, D006, D007, D008, D010, D011, D030 (Module II)	X01 Explosive Waste Components and Waste Paint Related Material
25	29.1[1,3]	**TONS**	D003, D001, D005, D006, D007, D008, D010, D011, D030 (Module II)	X99 Explosive Related Components, Sandblast Media and Waste Paint Related Material
26	291.0[3]	**TONS**	D003, D008, D030 (Module II)	X01 Explosive Related Components, Sandblast Media and Waste paint Related Material

- 7058A (July 1997)

Foot Notes:

1: Annual waste amount for Confined Detonation Chamber estimated as 1/10th of the total volume diverted from Open Detonation. Estimate assumes the CDC is brought on-line from an operation perspective.

2: T04: Treatment as defined by KRS 224.50-130 for manual or mechanical handling, separation of munitions components, handling, movement or overpacking of containers or munitions containing chemical agents (GB, VX, and H).

3: The weight in short tons for waste streams 24, 25 and 26 are expressed as Net Explosive Weight (NEW).

Facility's EPA ID Number											
K	Y	8	2	1	3	8	2	0	1	0	5

13. Existing Environmental Permits:

Inter-State Regional Program [A]: _____
Single Well (FURS) [B]: _____
County Program [C]: _____
DOE Program [D]: _____
Other EPA Program [E]: _____ specify: _____
EPA 404 (dredge or fill program) [F]: _____
USGS Program [G]: _____
Area Wells (FURS) [H]: _____
NOTIS [J]: _____
Superfund (CERCLA) [K]: _____
FATES [L]: _____
Municipal (city, town, etc.) Program [M]: _____
NPDES/KPDES (discharges to surface water) [N]: KY0020737
PSD (Prevention of Significant Deterioration - Clean Air Act) [P]: Title V Air Permits [V-12-037 & V-10-023]
CDS [Q]: _____
RCRA (hazardous wastes) [R]: KY8-213-820-105
State Program [S]: _____
DOT Program [T]: _____
UIC (underground injection of fluids) [U]: _____
Intra-State Regional Program [W]: _____
Other Federal Program [X]: _____ specify: _____
CICIS (OTS Chemicals in Commerce Information System) [Y]: _____
Other Non Federal Programs [Z]: Water Withdrawal Permit #1013

14 FACILITY STATUS:

☐ Waste is NOT received from off-site ☐ Accepts waste from any off-site source(s) [A]

☒ Accepts waste from only a restricted group of off-site sources(s) [R]:
Specify: Military Sources / Government Sources

15 PHOTOGRAPHS, DRAWING AND MAP - ***See INSTRUCTIONS*** ***[See Module I]***
All existing facilities must include photographs (aerial or ground level) that clearly delineate all existing structures; existing storage, treatment or disposal areas; and sites of future treatment, storage or disposal areas. All existing facilities must include a drawing showing the general layout of the facility and a topographic map. The photographs, drawing and map must be attached to this form.

16 If the facility owner is also the facility operator, please skip this section and complete item 17 below. ***[See Page 12, 13, &14]]***
Owner Certification - I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (PRINT OR TYPE) SIGNATURE DATE SIGNED

17 Operator Certification: For operations listed on Page 3, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

LEE G. HUDSON, COL, LG, US Army, BGAD Commanding — 28 Oct 15
NAME (PRINT OR TYPE) SIGNATURE DATE SIGNED

18 Land Owner Certification - I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

LEE G. HUDSON, COL, LG, US Army, BGAD Commanding — 28 Oct 15
NAME (PRINT OR TYPE) SIGNATURE DATE SIGNED

ADDENDUM NOTES / OPERATOR CERTIFICATION

I. The BGAD Commander is responsible for the overall permitted hazardous waste management mission throughout the facility.

II. Operator Certification, below (A) reflects the signature of BGCA Commander, responsible for the operations listed on page 4 through 8.

III Operator Certification, below (B) reflects the signature ACWA-BGCAPP Site Project Manager, responsible for the operations listed on page 9.

A. The BGCA Commander is responsible for operation of the HWSUs in the Chemical Limited Area (CLA) as listed on pages 4-8.

Operator Certification: For operations listed on pages 4 through 8, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Andrew J. Morgan
Lieutenant Colonel, US Army
Commanding
BGCA
Permit Operator

SIGNATURE — DATE SIGNED: 21 Oct 15

B. ACWA-BGCAPP Site Project Manager is responsible for operation in the Chemical Limited Area (CLA) as listed on page 9.

Operator Certification: For operations listed on page 9, I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Jeffrey L. Brubaker
ACWA-BGCAPP
Site Project Manager
Permit Operator

SIGNATURE

27 Oct 15

DATE SIGNED

Resource Conservation and Recovery Act (RCRA)

Class 2 Hazardous Waste Storage & Treatment Permit Modification Request, Addition of Treaty Sampling Operations, Mustard Agent (H) Items

for the Blue Grass Chemical Agent-Destruction Pilot Plant
Blue Grass Army Depot, Richmond, Kentucky

Submitted to:
Energy and Environment Cabinet
Kentucky Department for Environmental Protection
Division of Waste Management
200 Fair Oaks Lane, 2nd Floor
Frankfort, Kentucky 40601

Submitted by:
Blue Grass Army Depot
431 Battlefield Memorial Highways, Richmond, Kentucky 40475-5901

and

Assembled Chemical Weapons Alternatives
Blue Grass Chemical Agent-Destruction Pilot Plant
431 Battlefield Memorial Highway, Richmond, Kentucky 40475-5901

BGCAPP
Blue Grass Chemical Agent-Destruction Pilot Plant

Submitted 2 November 2015

Revision/Submission 0

Table of Contents

List of Figures

List of Attachments

Executive Summary

Mustard agent (H)-filled M110 155mm projectiles and Department of Transportation (DOT) bottles that are currently stored at the Blue Grass Army Depot (BGAD) will be treated using the Explosive Destruction Technology (EDT) at the Blue Grass Chemical Agent–Destruction Pilot Plant (BGCAPP). Sampling and analysis of agent from a select number of these munitions and DOT bottles is required by a commitment under the Chemical Weapons Convention (CWC) Treaty to provide confirmation of the type of chemical agent being destroyed. Kentucky Revised Statute 224.50-130(5) defines "treatment" to include the manual or mechanical handling of the chemical agent compounds of any munition containing the compounds during the processing of munitions to remove the compounds, to separate munitions components, and to otherwise prepare the components and compounds for destruction, neutralization, dismantling, or decommissioning; therefore, a permit application is required for conducting treaty sampling.

Tagged treaty rounds received into the EDT service magazine will be segregated and held in the EDT service magazine until near the end of the H-filled M110 155mm projectile campaign. H-filled M110 155mm projectiles and H-filled DOT bottles will be identified for treaty sampling by the Treaty Inspectors in accordance with (IAW) the CWC Treaty. The treaty sampling operation will be located in the chemical limited area (CLA) of BGAD. Sampling will be conducted by Edgewood Chemical Biological Center (ECBC) in a glovebox inside an Environmental Enclosure (EE). The sample analysis will be conducted at a mobile ECBC laboratory adjacent to the EE. The treaty items will be moved in an enhanced onsite container (EONC) from the EDT service magazine or directly from a chemical Hazardous Waste Storage Unit (HWSU)/igloo to the EE.

The treaty sampling operation will last approximately 14 work days. The number of munitions allowed in the EE will be limited to the number of rounds to be processed in one day, typically two items with a maximum of four items. Once sampled, the munitions and DOT bottles will be sealed, decontaminated, overpacked, monitored to less than the Worker Population Limit (WPL), and returned in an EONC either to the EDT service magazine or directly to the EDT for processing.

This Resource Conservation and Recovery Act (RCRA) permit application describes the transportation receipt, sampling, and return of the treaty items (projectiles and DOT bottles) to the EDT or EDT service magazine.

Acronyms/Abbreviations

ACWA – Assembled Chemical Weapons Alternatives

BGAD – Blue Grass Army Depot

BGCA – Blue Grass Chemical Activity

BGCAPP – Blue Grass Chemical Agent-Destruction Pilot Plant

BIF – Boilers and Industrial Furnaces

CAIRAP – Chemical Accident/Incident Response and Assistance Plan

CBR – Chemical, Biological, Radiological

CCTV – closed circuit television

CD – is a designated for a Hazardous Waste Storage Unit

cfm – cubic feet per minute

CLA – Chemical Limited Area

CPC - chemical protective clothing

CWC – Chemical Weapons Convention

DAAMS – Depot Area Air Monitoring System

DOD – Department of Defense

DOT – Department of Transportation

ECBC – Edgewood Chemical Biological Center

EDT – Explosive Destruction Technology

EE – Environmental Enclosure

EONC – enhanced onsite container

EPA – Environmental Protection Agency

H – Mustard Agent

HAZWOPER – Hazardous Waste Operations and Emergency Response

HEPA – High Efficiency Particulate Air

HW – hazardous waste

HWMTP - Hazardous Waste Management Training Program

Acronyms/Abbreviations (continued)

HWSU – Hazardous Waste Storage Unit

IAW – in accordance with

ISCP – Installation Spill Contingency Plan

KDEP – Kentucky Department for Environmental Protection

LO – is a designated for a Hazardous Waste Storage Unit

MINICAMS® – Miniature Continuous Air Monitoring System

MSDS – Material Safety Data Sheet

OC – Operations Center

OJT – on-the-job training

OSHA – Occupational Safety and Health Administration

PDS – Personnel Decontamination Station

PEO, ACWA – Program Executive Office, Assembled Chemical Weapons Alternatives

PPE – personal protective equipment

RCRA – Resource Conservation and Recovery Act

RDT&E – Research, Development, Test and Evaluation

SAA – Satellite Accumulation Area

SDS – spent decontamination solution

SDS – Safety Data Sheet

SPCCP – Spill Prevention Control and Countermeasures Plan

SRC – single round container

VSL – Vapor Screening Limit

WPL – Worker Population Limit

Part B: Facility Description [401 KAR 38:090, Section 2 & 40 CFR §270.14]

The General Facility Description (**B-1 through B-7**) is identified in the following Modules:

a. General description of Blue Grass Army Depot (BGAD) conventional mission operations is located in Module II, Part B of the BGAD Hazardous Waste Facility Permit, Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage Permit Renewal Application for Conventional Munition Related Items, Environmental Protection Agent (EPA) ID # KY8-231-820-105 dated May 2015.

b. General description of the Chemical Limited Area (CLA) is located in Module III, Part B of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Chemical Storage/Operations, EPA ID # KY8-231-820-105 dated May 2015.

References "a" and "b" pertain to an interim draft version of the RCRA renewal application of an existing BGAD permit, Revised May 2015. This renewal application is prepared in a modular format addressing various depot and tenant operations. It is currently under regulatory review and has already been through a 60-day public notice/comment period, March-May 2014. This version is made available to facilitate the review, as it is referenced in the newly added module for the Treaty Compliance Mustard Munitions Sampling.

B-8. Public Participation

A public meeting will be held following submittal of this permit modification request to introduce and explain this modification request (i.e., adding the H Treaty sampling Facility and transportation of chemical agent item).

In a separate submittal, the Kentucky Department for Environmental Protection (KDEP) will be provided the following:

a. A summary of the pre-permit modification request public meeting.
b. A list of attendees and their addresses.
c. Copies of written comments or materials submitted at the meeting.

B-9. Fees

An existing grant from Assembled Chemical Weapons Alternatives (ACWA) to KDEP includes monies to pay the fee for filing and review of this Class 2 BGAD RCRA Permit Modification. No additional monies are required.

Part C: Waste Analysis Plan [401 KAR 38:090, Section 2(3), 34:020, Section 4 & 40 CFR §264.13(b)]

Permittee will follow the Waste Analysis Plan as identified in the following Module:

Module III, Part C of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Chemical Storage/Operations, EPA ID # KY8-231-820-105 referenced in the Part B.

Part D: Process Information [401 KAR 34:180, 38:150, and 34:190, Sections 1 & 3 & 40 CFR §264.170-179, 270.15, 264.190, and 264.192(a)]

Mustard Agent (H)-filled M110 155mm projectiles and Department of Transportation (DOT) bottles that are currently stored at the BGAD will be treated using the Explosive Destruction Technology (EDT) at the Blue Grass Chemical Agent–Destruction Pilot Plant (BGCAPP). This process is described in the RCRA Class 3 Hazardous Waste Storage & Treatment Permit Modification Request, Addition of Explosive Destruction Technology for the Blue Grass Chemical Agent-Destruction Pilot Plant, BGAD, Richmond, Kentucky. Sampling and analysis of agent from a select number of these munitions and two DOT bottles is required to comply with a commitment under the Chemical Weapons Convention (CWC) Treaty to provide confirmation of the type of chemical agent being destroyed.

The selected tagged treaty rounds received into the EDT service magazine will be segregated and held in the EDT service magazine until near the end of the H-filled M110 155mm projectile campaign. H-filled M110 155 projectiles and H-filled DOT bottles will be identified for treaty sampling by the Treaty Inspectors in accordance with (IAW) the CWC Treaty. The EDT service magazine and treaty sampling operation will be located in the CLA. Sampling will be conducted by Edgewood Chemical Biological Center (ECBC) in a glovebox inside an Engineering Enclosure (EE). The sample analysis will be conducted at a mobile ECBC laboratory adjacent to the EE. The treaty items will be moved from the EDT service magazine or directly from a chemical Hazardous Waste Storage Unit (HWSU)/igloo to the EE.

Enhanced onsite containers (EONCs) will be used to transport the treaty items from the EDT service magazine or storage igloo to the treaty sampling site, see figures 5 and 6. These EONCs will be mounted on specialized trailers and pulled by a truck (figures D-5 and D-6). Transport in EONCs over a restricted access road will occur only during daylight hours. The projectile body, DOT bottles, or overpacks are the primary containers. The EONCs are considered secondary containment. EONCs provide airtight, secondary containment of chemical munitions during transport. These EONCs have design features that allow agent monitoring of the sealed EONC. Prior to opening at the facility, the atmosphere inside each loaded EONC is monitored for the presence of agent vapors. This is done to ensure no leaking munitions are present inside the EONC. Transport of chemical munitions is regulated as treatment under Kentucky Revised Statues [KRS 224.50-130(5)]. BGAD's Part A of Kentucky Hazardous Waste Permit Application (pages 1-14) has been updated to reflect the Class 2 Modification request for sampling and transportation of chemical agent (H) items.

The treaty sampling operation will last approximately 14 work days. The sampling operations to include movement will occur during daylight hours. The number of munitions in the EE will be limited to the number of rounds to be processed in one day, typically two to four items. Once sampled, the items will be sealed, decontaminated, removed from the glovebox, monitored for H to the Worker Population Limit (WPL) of

0.0004 mg/m^3, overpacked, and returned in an EONC either to the EDT service magazine for storage or directly to the EDT for processing.

This RCRA permit application describes the receipt, sampling, and return of the treaty rounds to the EDT or EDT service magazine.

This operation will be performed under the Federal and the Commonwealth of Kentucky hazardous waste regulations. Part A of this RCRA Permit Modification Request provides the hazardous waste numbers associated with each of these items containing H agent.

Sampling for H-filled projectiles and DOT bottles for treaty purposes will be the only operation conducted inside the EE, therefore, other portions of the KDEP checklist (e.g., for storage, landfills, waste piles, incinerators) are not applicable. Following this Part D are copies of the referenced figures.

D-1. Containers

D-1a. Container Management

H-filled M110 155mm projectiles and DOT bottles will be sampled for treaty compliance in a glovebox inside the EE. The number of H-filled M110 155mm projectiles or DOT bottles in the EE at any given time will only be the amount that will be processed that day, typically two to four items. There will be no RCRA permitted storage areas at the treaty sampling site. Secondary waste generated during sampling and analysis operations will be collected in a designated hazardous waste storage site (Satellite Accumulation Areas [SAAs] or a less than 90 day) area located at the site.

D-1a(1). H-filled M110 155mm Projectiles and DOT Bottles

A description of the H-filled M110 155mm projectiles can be found in Module III, Section D-1a(5)a of the Chemical Storage Permit Application referenced in the Part B. Description of the DOT bottles can be found in Module III, Section D-1a(8). Once the item is sampled and plugged it will be decontaminated, overpacked, monitored to less than the WPL, and transported to the EDT service magazine or directly to the EDT for processing.

D-1a(2). Wastes Generated During Sampling Operation

Wastes that will be generated during the treaty sampling operation include spent decontamination solution (SDS), agent-contaminated plastic, Personal Protective Equipment (PPE), and agent-contaminated spent carbon, laboratory wastes, and miscellaneous agent-contaminated metal parts. Wastes generated will be stored in containers in a hazardous waste storage site located at the site. This waste generated is comparable to the waste produced in the management of the chemical weapons identified in Module III section D-a(9) of the Chemical Storage Permit Application.

Containers containing hazardous waste (HW) will be marked as "Hazardous Waste" with the Kentucky HW code of N003 for H. Hazardous waste containers will be kept closed except when waste is being added, removed, decontaminated, or monitored/sampled. Once the containers are full or no longer in use, they will be dated and transported to a permitted HWSU LO[1.] or a less than 90 day storage site. HW that is generated in this operation will be maintained in containers that conform to the minimum size necessary to house the waste generated and that meet or exceed performance-oriented packaging. Once the treaty sampling operation is complete the site will be closed IAW with Section I of this permit application and all hazardous wastes transported to a permitted HWSU LO. Hazardous waste will be transported for disposal IAW Module III, Section D-1 of the Chemical Storage Permit Application, referenced in the Part B.

D-1b. Containers With Free Liquids or F020, F021, F023, F026, and F027 Wastes

Not applicable. There will be no RCRA permitted storage areas in the EE. The number of HW items (H projectile and/or DOT bottles) in the EE at any given time will only be the amount that will be sampled that day.

D-1c. Containers Without Free Liquids or F020, F021, F023, F026, and F027 Wastes

Not applicable. There will be no RCRA permitted storage areas in the EE. The number of HW items (H projectile and/or DOT bottles) in the EE at any given time will only be the amount that will be sampled that day.

D-1d. Requirements for Ignitable or Reactive Wastes and Incompatible Wastes

Not applicable. There will be no RCRA permitted storage areas in the EE. The number of HW items (projectiles and/or DOT bottles) in the EE at any given time will only be the amount that will be sampled that day.

D-2. Process Information: Tank Systems

Not applicable. The EE will not include any tank systems.

D-3. Surface Impoundments

Not applicable. The treaty sampling operation will not include any surface impoundments.

[1.] *LO – is a designated for a Hazardous Waste Storage Unit*

D-4. Waste Piles

Not applicable. The treaty sampling operation will not include any waste piles.

D-5. Land Treatment

Not applicable. The treaty sampling operation will not include land treatment.

D-6. Landfill Design

Not applicable. The treaty sampling operation will not include landfills.

D-7. Incinerators

Not applicable. The treaty sampling operation will not include an incinerator.

D-8. Miscellaneous Units

Not applicable. The treaty sampling operation will not include any miscellaneous units.

D-9. Boilers and Industrial Furnaces (BIFs)

Not applicable. The treaty sampling operation will not include any BIFs.

D-10. Containment Buildings

Not applicable. The treaty sampling operation will not include any containment buildings.

D-11. Drip Pads

Not applicable. The treaty sampling operation will not include any drip pads.

D-12. Treaty Sampling Operation

D-12a. Description of the Treaty Sampling Site

The treaty sampling site location will be next to Building 16550 which is west of the BGCAPP site, and across from HWSU/igloo CD[2.] in the CLA (see Figure D-1). The typical treaty sampling site layout consists of a glovebox inside an EE, a Personnel Decontamination Station (PDS), a command post, a storage area, utilities, a monitoring house, and a laboratory (see Figure D-2).

[2] *CD – is a designated for a Hazardous Waste Storage Unit*

Description of the Environmental Enclosure (EE)

The EE has four sides, a roof, and is constructed of steel. The bermed floor will be constructed with three separate layers to contain liquid spills and prevent run on/run off. There are two Chemical, Biological, and Radiological (CBR) carbon filtration units (6,000 cubic feet per minute [cfm] and one 2,500 cfm) on the EE. The carbon filtration units will provide sufficient ventilation under engineering controls to maintain the glovebox, EE, and PDS at a negative pressure and prevent the uncontrolled release of the H vapors to the environment. Figure D-3 is a typical photo of an EE and PDS.

Description of the Personnel Decontamination Station (PDS)

The PDS is used for workers to egress from the EE. It is an extension of the EE and consists of a PPE drop location followed by hot zone to cold zone shuffle pans of sodium hypochlorite and water.

Personnel will be monitored IAW the ECBC Site Specific monitoring plan [the *Site Specific Air Monitoring Plan for the Sampling Operation in Support of the Blue Grass Chemical Agent – Destruction Pilot Plant (BGCAPP) Located on the Blue Grass Army Depot (BGAD)Revision 1, dated May, 2015* (Attachment D-1)]. This plan is for reference only; the most current copy of the ECBC monitoring plan will be available at the sampling location.

Description of the Glovebox

The glovebox is maintained under negative pressure and includes both carbon and High Efficiency Particulate Air (HEPA) filtration to capture agent vapors. The glovebox is maintained under negative pressure utilizing the 2500 CFM filtration system attached to the EE. The glovebox will be certified by ECBC Safety and Health officials to verify proper glovebox ventilation and filter function before treaty sampling operations begin. Proper ventilation will be verified by operators prior to use each day. Audible and visual alarms will indicate loss of negative pressure. The glovebox is designed to capture the entire liquid volume of a projectile or DOT bottle. Figure D-4, shows the typical glovebox.

Description of the Monitoring

Monitoring for H agent, using near real time monitoring with Miniature Continuous Air Monitoring System® (MINICAMS®) and Depot Area Agent Monitoring System (DAAMS) for confirmation, will take place IAW with the ECBC Site Specific monitoring plan. A MINICAMS® trailer will be located next to the EE. Monitoring for worker protection inside the EE and PDS and at mid-bed and exhaust of the CBR carbon filtration unit will be initiated prior to the first item to be sampled being brought into the EE, and will continue until operations are completed.

Other

The treaty sampling site will include an air compressor, power distribution and trailers for storage, and the ECBC analytical laboratory. A command post will be located on the site. Closed Circuit Television (CCTV) cameras and communication equipment such as radios or cell phones will be monitored from the command post.

D-12b. Description of the Process to Transport the Munitions to the Sampling Location and Return to the EDT Once the Sample is Taken

The items to be sampled will be stored in the EDT service magazine or in a chemical HWSU. The EDT operations will last approximately 9-12 months and the treaty sampling will occur near the end of the EDT operations. The items to be sampled include H-filled M110 155mm projectiles as well as H-filled DOT bottles. Sampling operations are anticipated to take about 14 work days. Each item or items planned to be sampled each day (four or less) will be loaded into an EONC and transported to the treaty sampling site. Once an item is sampled, plugged, decontaminated, and monitored to less than the WPL it will be placed back into a Single Round Container (SRC) and loaded into an EONC for transport back to the EDT service magazine for storage or directly to the EDT for processing. ACWA will be responsible for loading/movement of the items, and follow the general process steps (1) IAW Module III, Section D-Tab 1 of the Chemical Storage Permit application, referenced in the Part B of this application, and (2) IAW Class 3 Hazardous Waste Storage & Treatment Permit Modification Request Addition of EDT, Section D.

D-12c. Description of the Process to Drill and Sample the Material Inside the Munition or DOT Bottle

The drill and sampling process will be conducted by ECBC personnel IAW ECBC procedures. Current copies of ECBC procedures will be available at the sampling location. One item at a time will be placed in the glovebox and secured. The item will be breached to gain access to the liquid inside using a remote drilling device or cordless drill as follows:

1. The area to be drilled will be carefully cleaned with sodium hypochlorite spray and alcohol wipes.
2. The appropriate sized drill bit will be installed on the drilling device. The drill bit will include a device to restrict the depth of intrusion into the metal surface of the munition body.
3. If using a remote drilling device, the device will be secured on the munition and connected to the control unit. The remote drilling will be conducted using CCTV by the site supervisor using the remote drilling device controller located in the command post or monitoring shelter.
4. The appropriate diameter of hole will be drilled, sufficiently piercing the metal surface of the item and allowing the sample to be collected.
5. Following sampling, a drill fitting plug, cap, or similar rubber stopper will be

placed in the drilled holes and sealed. The item will be decontaminated, removed from the holder, monitored, placed in an SRC, and returned in an EONC either to the EDT service magazine for storage or directly to the EDT for processing.

A sample will be taken, diluted to Research, Development, Test and Evaluation (RDT&E) dilute solutions concentrations as defined by Army Regulation 385-10, and placed in a vial and sealed. The sample will then be placed in a container. The outside of the container will be monitored to less than the WPL and hand carried to the ECBC onsite laboratory for analysis. The item breached will be plugged, decontaminated, monitored to less than the WPL, removed from the glovebox, and placed in an SRC.

D-12d. Description of Laboratory Operations

A diluted sample from each item will be received at the ECBC onsite laboratory located on the treaty sampling site. After analysis is completed, any remaining sample quantity will be decontaminated and disposed of IAW Section D-12f once sample results are approved by staff from the Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA.)

D-12e. General Safety and Emergency Preparedness

To assure general safety and emergency preparedness, the site is equipped with emergency generators. Fire extinguishers will be located inside the EE. Sodium hypochlorite will be available for use for decontaminating both personnel and equipment. Medical support will be provided by BGAD. Standby rescue personnel will be available during sampling operations. Workers will be dressed in the appropriate level of protection IAW with ECBC procedures.

Agent spills contained inside the glovebox or EE will be decontaminated by ECBC personnel. The BGCA Emergency Response Plan will be followed for agent outside of engineering control (see Module III, Part G of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Chemical Storage/Operations, EPA ID # KY8-231-820-105 referenced in the Part B).

D-12f. Information About Waste Generated During the Sampling and Analysis Process

Wastes that will be generated during the treaty sampling operation and closure of the site include SDS, agent-contaminated plastic and PPE, agent-contaminated spent carbon and HEPA filters, laboratory wastes, and miscellaneous agent-contaminated metal parts. Hazardous wastes will be collected in containers in a SAA or less than 90 day storage area located at the site, followed by transport to HWSU LO for disposal IAW Module III, Section D-1 of the Chemical Storage Permit Application. Agent contaminated wastes carry the Commonwealth of Kentucky hazardous waste number — N003. Agent headspace monitoring or generator knowledge will be used for characterization.

D-12g. Contingency

The command post, in accordance with 401 KAR 34:040 and 40 CFR 264.53(a), will maintain a copy of the BGAD Contingency Plan for Chemical Storage/Operations. This plan minimizes hazards to human health and the environment due to fires, explosions, and unplanned sudden or non-sudden releases of hazardous wastes or hazardous waste constituents to air, soil, surface water, or groundwater. The Contingency Plan describes the response by Facility personnel to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface water, or groundwater at the Facility. This plan contains information in accordance with the requirements for a contingency plan and emergency procedures (i.e., 401 KAR 34:040, 401 KAR 38:090, Section 2, (7); and 40 CFR 264 Subpart D).

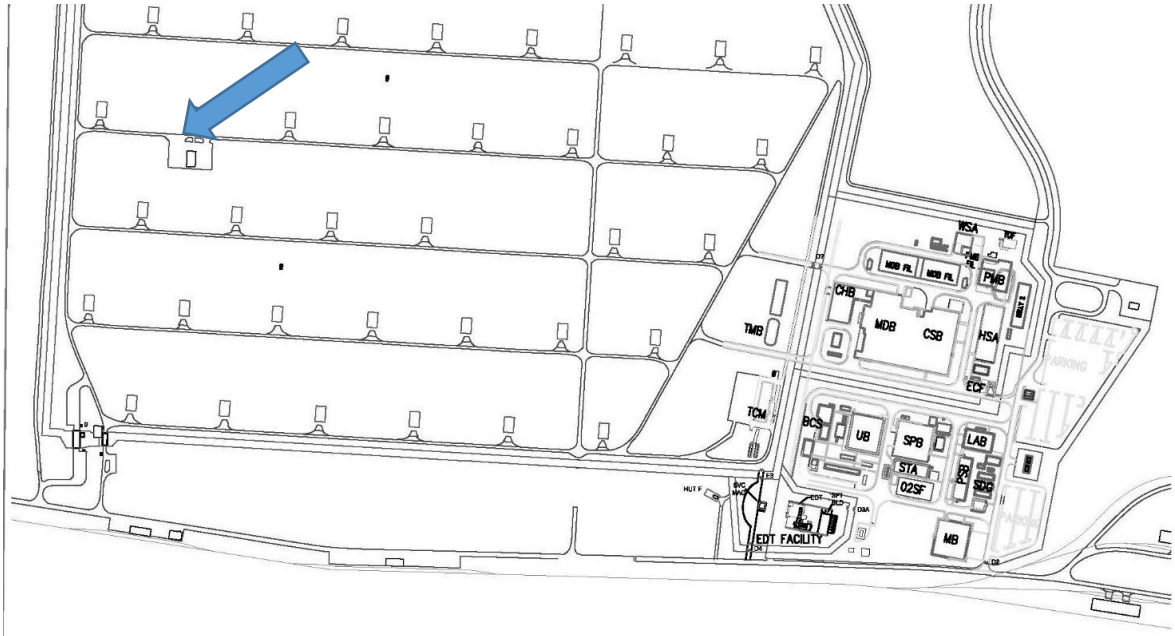
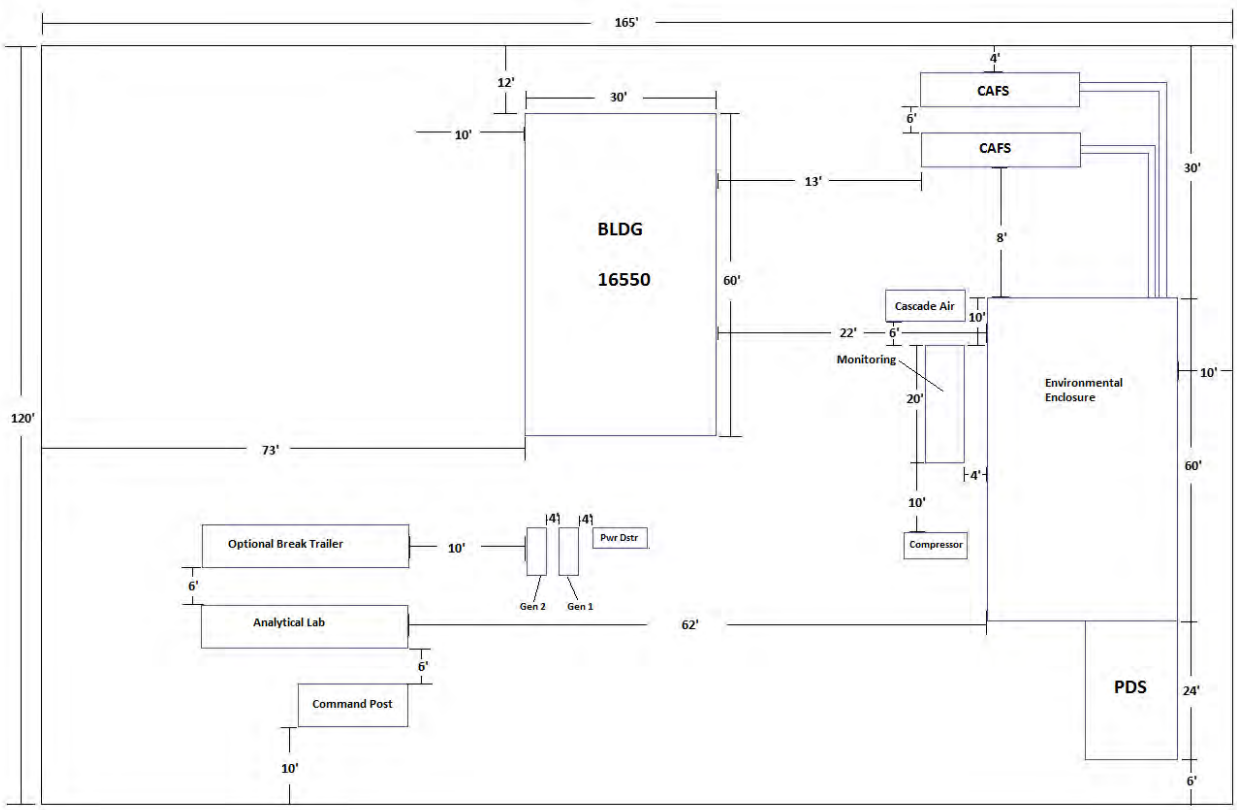


Figure D-1. H Treaty Sampling Site Location



PDS – Personnel Decontamination Station
CAFS – Chemical Agent Filtrations System
C/Air – Cascade Air Supply

Figure D-2. General Treaty Sampling Site Layout

(Actual layout may vary from the layout above)

Figure D-3. Typical Photo of Environmental Enclosure (EE) and Personnel Decontamination Station (PDS)

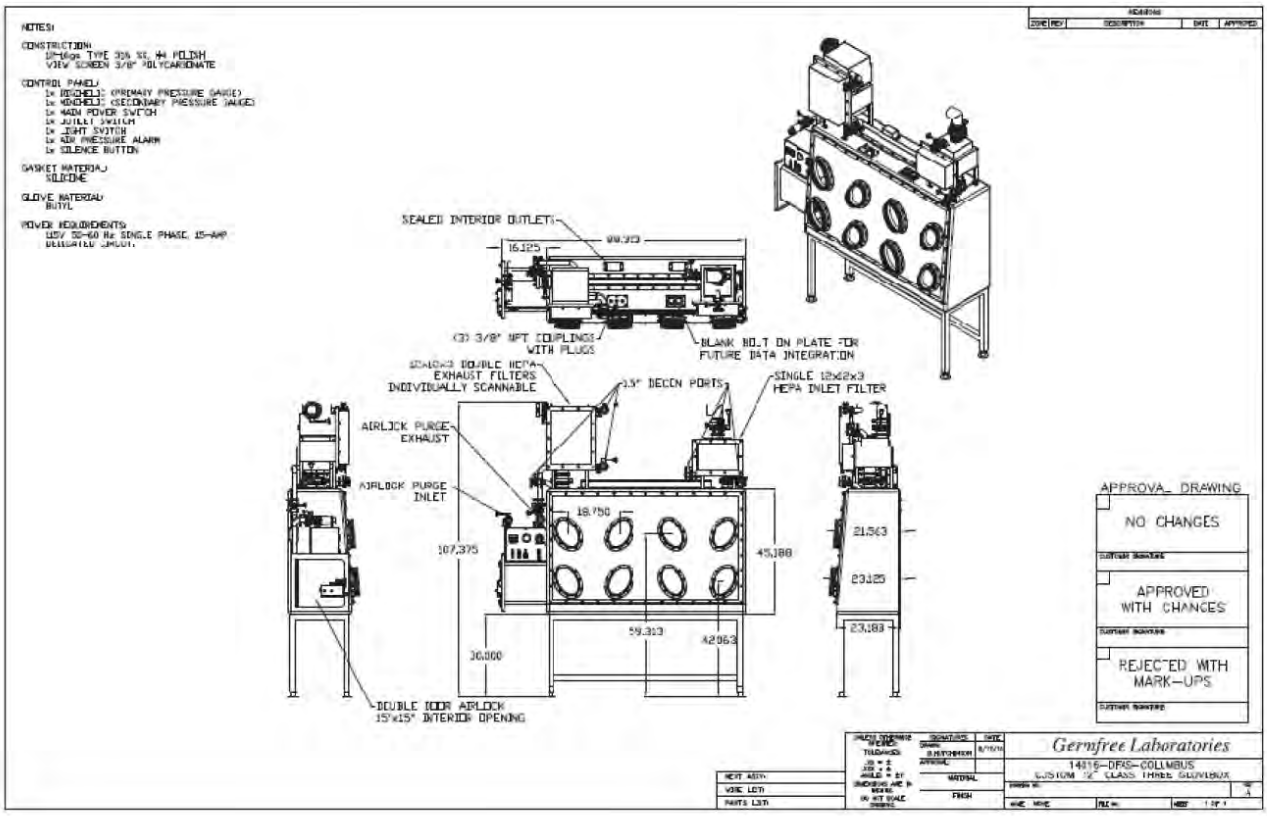


Figure D-4. Typical Glovebox

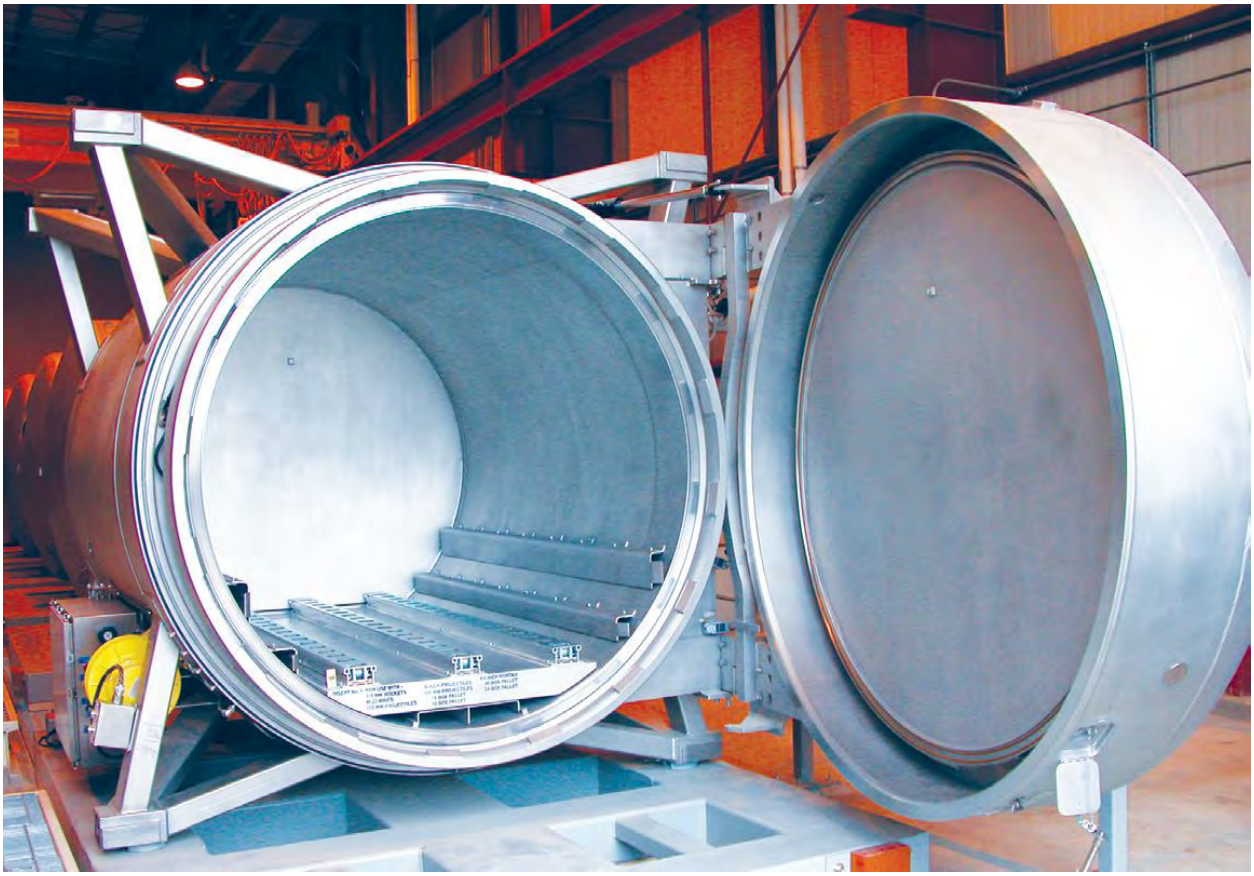


Figure D-5. Typical Photo of Empty, Open EONC Inside a Container Handling Building

Figure D-6. Typical Photo of EONC Being Loaded/Off-loaded

Attachment D-1

Site Specific Monitoring Plan: Site Specific Air Monitoring Plan for the Sampling Operation in Support of the Blue Grass Chemical Agent –Destruction Pilot Plant (BGCAPP) Located on the Blue Grass Army Depot (BGAD), Revision 1, dated May, 2015

This plan is for references only; the most current copy of the ECBC monitoring plan will be available at the sampling location.

EDGEWOOD CHEMICAL BIOLOGICAL CENTER

CHEMICAL BIOLOGICAL APPLICATIONS AND RISK REDUCTION

ENVIRONMENTAL MONITORING LABORATORY

SITE SPECIFIC AIR MONITORING PLAN

FOR THE SAMPLING OPERATION IN SUPPORT OF THE BLUE GRASS CHEMICAL AGENT-DESTRUCTION PILOT PLANT (BGCAPP)

LOCATED ON THE BLUE GRASS ARMY DEPOT (BGAD)

May 2015

DRAFT

For References Only

Revision 1

U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND

DRAFT

FOR BLUE GRASS ARMY DEPOT SAMPLING OPERATIONS

May 2015

Revision 1

Approved By:

X

Record of Change

Revision 1: original document

DRAFT

1.0 INTRODUCTION

This document serves as the site-specific air monitoring plan to support the treaty verification sampling operations confirming agent type of munitions to be destroyed at the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) Explosives Destruction Technology Facility. This plan addresses the air monitoring requirements as specified in the U.S. Army Chemical Materials Agency (CMA) Programmatic Monitoring Concept Plan (MCP), the CMA Programmatic Laboratory and Monitoring Quality Assurance Plan (LMQAP), and the U.S. Army Edgewood Chemical Biological Center (ECBC) Environmental Monitoring Laboratory (EML) Laboratory and Monitoring Quality Control Plan revision 2, December 2011.

2.0 PURPOSE

This plan establishes the policies, objectives, and responsibilities for the execution of the monitoring program to support sampling operations for the BGCAPP. The plan identifies the chemical of concern and describes the rationale for monitoring strategies and equipment used during operations.

The objectives of site monitoring are:

- Provide worker and environmental protection by conducting analyses for the chemical of concern.
- Provide early warning of potential releases of the chemicals of concern.

3.0 MONITORING RESPONSIBILITIES

The responsibilities of the ECBC EML are:

- Provide guidance on monitoring operations conducted on site.
- Provide certified equipment, methods, and personnel capable of generating defensible monitoring data to be incorporated into the ECBC Environmental Monitoring Laboratory 40-year database.
- Provide trained and certified personnel to operate air monitoring and laboratory equipment.
- Perform monitoring procedures as outlined in the project scope of work, EML laboratory quality assurance programs, and this monitoring plan.
- Collect and retain all air monitoring data generated during this project.
- Conduct project-specific on-site air monitoring and sample analyses to support operations

4.0 CHEMICALS OF CONCERN

The chemical of concern for this operation is the blister agent mustard (HD).

4.1 AIRBORNE EXPOSURE LIMITS

An airborne exposure limit (AEL) is a general term that describes the maximum allowable air concentrations for occupational and general population exposure to chemicals. AELs for chemical warfare agents are published in the Department of the Army Pamphlet (DA PAM) 385-61 (2008) Table 2.1.

Table 1: Airborne Exposure Limits for the Chemical of Concern

Chemical Name	Abbreviation	CAS Number	STEL/VSL	WPL
Bis- (2-chloroethyl) sulfide (mustard)	HD	505-60-2	0.003 mg/m³	0.0004 mg/m³

4.1.1 Worker Population Limit (WPL)

The WPL is the maximum allowable 8-hour time-weighted average concentration that an unmasked worker could be exposed to for an 8 hour workday, 40 hours per week, for 30 years without adverse effect. There is no health significance from a single or short-term exposure at this concentration. Low level monitoring using either a near real-time (NRT) monitor or an historical monitor is conducted if unmasked workers are present in an area where chemical agent contamination may be present.

4.1.2 Short Term Exposure Limit (STEL)

The STEL is the maximum concentration to which unprotected chemical workers may be exposed for up to 15 minutes. ECBC conducts near real-time monitoring using a sample collection and analysis time of less than 15 minutes. Therefore, near real-time monitoring is technically conducted at the vapor screening limit in areas where chemical agent may be present. This monitoring is designed as an early warning system to notify workers of possible chemical agent in the environment.

4.1.3 Vapor Screening Level (VSL)

The VSL is equivalent to the absolute STEL concentration, but it is independent of a designated sampling time and may be used for worker protection/notification and to define the level of item cleanliness.

5.0 GENERAL MONITORING APPROACH

EML personnel will conduct monitoring for a variety of purposes, as described below. A summary of monitoring locations is provided in Table 2. NRT monitoring will be performed using MINICAMS® operated in accordance with EML IOP MT-2. DAAMS monitoring will be performed using EML IOP MT-11.

5.1 Work Space Monitoring

Work space monitoring (NRT and confirmation) will be performed in the workspace at the front of the glove box and at the unpack area/sample table, within the environmental enclosure. Changes in PPE will be addressed in the work plan and the health and safety plan. Work space monitoring will serve to notify workers of chemical concentrations in the area.

Confirmation monitoring, to validate or invalidate a MINICAMS® alarm will use DAAMS tubes collocated at the NRT monitoring location.

5.2 Air Filter Units

Air filtration units (AFUs) will be used to ventilate the environmental enclosure. The dedicated MINICAMS® monitoring each AFU will operate in conjunction with an automatic stream selection system that allows collection and analysis of samples at each of the three levels of the AFU midbed to identify any agent migration past the first carbon bed. The stream lock feature will be enabled during normal operations. If three consecutive alarms occur at the mid-bed location, monitoring will be manually switched to the filter exhaust position of the filter unit. Each filter unit will have a dedicated MINICAMS® unit.

5.3 Personnel Decontamination Station (PDS) Monitoring

A single MINICAMS® unit will be dedicated to provide monitoring for potentially exposed personnel and/or chemical casualties. DAAMS will be used for NRT alarm confirmation, but does not need to be immediately available.

5.4 Decontamination Verification Monitoring

Decontamination verification monitoring is performed to determine the level of cleanliness of an item after it has been surfaced decontaminated by approved procedures. All items monitored to determine level of cleanliness shall be bagged or contained to trap vapors. The ECBC EML utilizes a headspace procedure for determining the level of cleanliness. This does not apply to a decontaminated liquid, detoxified liquid, soil, or a gas. Some items may be released from Government control if appropriate monitoring is performed and all Federal, State and local provisions have been met.

6.0 SITE SPECIFIC MONITORING LOCATIONS

The following locations will be monitored for this operation.

6.1 Glovebox

A single MINICAMS® unit will be used to monitor the workspace in front of the glove box. DAAMS samples for MINICAMS® alarm confirmation will be co-located with the sample line for this location.

6.2 Unpack Area/Sample Table

A single MINICAMS® unit will be used to monitor the area at/around the unpack area/sample table. DAAMS samples for MINICAMS® alarm confirmation will be co-located with the sample line for this location. This location may be used for headspace monitoring as required.

6.3 Personnel Decontamination Station (PDS)

A single MINICAMS® unit will be used to provide monitoring for the PDS.

6.4 Air Filtration Units

A single MINICAMS® unit configured with a stream selection system will be used to monitor each filtration unit. Each unit will have up to 3 midbed locations and an exhaust location. The midbeds will be the default monitoring location, with each level monitored sequentially. Upon 3 consecutive alarms at a midbed location, the MINICAMS® operator will manually set the stream selector to monitor the filter exhaust of the filter unit that went into alarm.

DAAMS samples for MINICAMS alarm confirmation will be collected at each AFS location. Historical DAAMS samples will be collected at the inlet to the AFU. If a common duct is used to connect multiple AFUs, the historical sample will be located in the common duct.

6.5 Head Space Monitoring

The MINICAMS® at the unpack area/sample table will also be available for head space monitoring for operational purposes and for decontamination verification as required. Head space monitoring is performed to verify that items are not actively off-gassing chemical agent. Decontamination verification monitoring must meet the requirements found in section 5.4.

DAAMS may be used for headspace monitoring.

6.6 Treaty Trailer

Historical monitoring using DAAMS will be conducted inside the treaty trailer on all operational days that OPCW team members occupy the trailer.

Table 2: Monitoring Locations

NRT Location No.	Location Description	MINICAMS®	NRT Confirmation	Historical (WPL)	Comments/reason for monitoring
1	Glove box	Yes	Yes	No	Workspace Monitoring
2	Unpack Area/Sample Table	Yes	Yes	No	Workspace Monitoring and Headspace Monitoring
n/a	Historical workspace at AFU inlet	No	N/A	yes	
3-1 3-2 3-3 3-12	Filter 1, Midbed 1 Filter 1, Midbed 2 Filter 1, Midbed 3 Filter 1, Exhaust	Yes	Yes	No	Verify Midbed Integrity and Environmental Protection
4-1 4-2 4-3 4-12	Filter 2, Midbed 1 Filter 2, Midbed 2 Filter 2, Midbed 3 Filter 2, Exhaust	Yes	Yes	No	Verify Midbed Integrity and Environmental Protection
5	PDS	Yes	available	No	Monitoring for potentially exposed

					workers/chemical casualties
n/a	Treaty Trailer	No	No	Yes	Historical WPL monitoring

7.0 Reporting Detections of Chemicals of Concern

7.1 MINICAMS® Alarms

MINICAMS® are equipped with an alarm that is set to warn of potentially dangerous conditions. The alarm level for HD is 0.70 VSL.

7.2 MINICAMS® Alarm Communication and Confirmation

MINICAMS® alarm results will be communicated to the command post. Actions taken regarding workers and site personnel will be dictated by the ECBC site safety representative/site supervisor. Three consecutive MINICAMS® alarms require DAAMS confirmation, in accordance with EML IOP MT-02, MT-11 and MT-13.

7.2.1 MINICAMS® Alarm – A single event when the MINICAMS® result exceeds the alarm set point. The command post (CP) is notified by the MINICAMS® operator. The operator reports the MINICAMS® reading in VSL units.

7.2.2 MINICAMS® Ringoff – Three consecutive alarms from a MINICAMS®. Confirmation is required for all chemical agent ringoffs except for head space monitoring.

7.2.3 Confirmed Ring-off – If DAAMS results confirm a MINICAMS® ring-off, the event is considered confirmed. The concentration report for the event will be based on the MINICAMS® readings in accordance with ECBC and Army policy.

7.3 Suspension of Monitoring/ Alarm confirmation

In cases where an area has been confirmed to contain agent vapors and appropriate safety measures have been implemented, reconfirmation (continued analysis of MINICAMS® confirmation samples) may be suspended at that location. The decision to suspend confirmation sampling will be based on guidance from the site safety representative and concurrence from EML/CBARR management or their designee.

7.4 Reporting Results from Multiple Methods

If two class I methods report different values for the same item/sample/event, the greater of the two results shall be used.

8.0 DATA REPORTING

The EML shall report daily analytical results in an analytical/situation report. The following information will be included in the report or available: (1) date of analyses (2) sampling location (3) analyst name (4) EML field sample identification number (5) client sample identification number (6) results for each analysis, including units and (7) results of quality control samples.

9.0 QUALITY CONTROL (QC)

9.1 Certification

9.1.1 Method Certification

Site specific method precision and accuracy studies will be performed before the start of operations, in accordance with the EML Laboratory and Monitoring Quality Control Plan (LMQCP, Revision 2, December 2011). Previous studies performed on site may fulfill this requirement. All methods used to support worker and environmental protection will meet ECBC EML class I method certification requirements. Waste evaluation methods shall meet the requirements outlined in the site waste analysis plan. Documentation of successful method certification will be available upon request.

9.1.2 Operator Certification

All individuals performing monitoring activities will be certified in accordance with EML certification requirements as described in the EML LMQCP (Revision 2, December 2011). Documentation of successful certification will be available upon request.

9.1.3 Instrument Certification

All instruments used to generate monitoring data will meet instrument certification requirements described in the EML LMQCP (Revision 2, December 2011). Documentation of successful certification will be available upon request.

9.2 Calibration and Challenge

9.2.1 MINICAMS® Calibration

Calibration requirements for MINICAMS are found in EML IOP MT-02 and the EML LMQCP (Revision 2, December 2011).

9.2.2 MINICAMS® Challenge

After successful initial calibration, all MINICAMS® will be challenged before operations begin, every 4-5 hours during operations, and at the end of the operational day.

9.3 Corrective Action

Corrective action will be initiated based on the results of routine internal QC checks. Corrective action will be initiated when potential or existing conditions are identified that may adversely affect data quality. Events that require corrective action include violation of approved analytical procedures, out-of-control conditions, and non-conformances as described in the EML LMQCP (Revision 2, December 2011). The need for corrective action must be documented and reported to the ECBC site supervisor. The corrective action may be immediate or long term. An immediate corrective action may be the recalculation of results, reanalysis of samples, or repeat of sample collection. A long term corrective action may require an increase in the number of QC samples, more frequent calibration and checks, or replacing monitoring equipment.

9.4 Data

During the project, ECBC will maintain control over all results and data generated from the analyses. All monitoring operations will be conducted in accordance with the EML LMQCP (Revision 2, December 2011) and EML IOPs. ECBC will incorporate the data generated into the Environmental Monitoring Laboratory 40-year data storage program, should access to additional information be required.

10.0 LIMITING CONDITIONS OF OPERATION

Operations during this project are governed by limiting conditions of operation (LCOs). Each day the site manager/designee will determine that all LCOs have been met. The monitoring LCOs are: sufficient number of certified operators, sufficient calibration and challenge standards available, all instruments actively supporting operations are calibrated and in control, a sufficient number of instruments are available to support operations, sufficient confirmation/historical monitoring equipment is available. Sufficient numbers of personnel and equipment will be determined by the site manager or EML designee.

Part E: Groundwater Monitoring [401 KAR 35:060 & 40 CFR §265.92]

Groundwater monitoring requirements are not applicable. The chemical operations within the EE are not land-based disposal units. The EE unit is designed to contain and control all releases, thereby preventing impacts to the groundwater. Although the EE unit manages chemical wastes that contain free liquids (i.e., projectiles and DOT bottles), the design and hazard prevention procedures of the EE unit provide protection for the environment and general public, eliminating the requirement for groundwater monitoring in the vicinity of the sampling facility.

In addition, the CLA does not contain any identified solid waste management units that require groundwater monitoring.

Part F: Procedures to Prevent Hazards [401 KAR 34:020]

F-1. Security

F-1a. Waiver

No waiver from the security requirements is requested.

F-1b. Security Procedures and Equipment

F-1b(1). 24-Hour Surveillance System

The facility is divided into two main areas in relation to operations. The administrative area, where there are no applications for permitted hazardous waste storage facilities, and the restricted area, which includes a highly secured area designated as the CLA. The CLA is where chemical munitions are stored and chemical operations to include demilitarization operations (main plant, EDT, EDT service magazine and H sampling will occur). The BGAD guards patrol all areas of the facility. There are security checkpoints at the entrance to each area. Personnel and vehicle access is limited at the main entrance (administrative area) which is guarded 24-hours/day.

Extraordinary precautions are taken to ensure the security of the CLA. The CLA is fully contained within the restricted area. The CLA is a secure area. Access to the area within the fenced perimeter requires special procedures. Requirements for visitors to obtain permission to enter include health tests, security, and safety procedures. Visitors requiring access into the CLA are provided an escort during their visit into the CLA.

All personnel are required to be cleared for entry into the CLA. All personnel must enter the CLA through a security check point. Vehicles entering and exiting the CLA are thoroughly inspected.

F-1b(2). Barrier and Means to Control Entry

Chemical munitions are stored in magazines/storage units designed to store energetic materials and meet ammunition storage requirements.

Chain link fences surround the CLA. These fences are separated by a clear area. Each fence is topped with barbed wire. This design forms a buffer zone surrounding the storage igloos in the CLA.

F-1c. Warning Signs

Posted at both entrances to the facility are warning signs that inform visitors and personnel that they are entering a limited access government facility.

The fences have warning signs posted every 50 yards. A sign at the entrance to the CLA indicates the presence of hazardous waste therein.

Each storage unit and operational unit containing chemical agent in the CLA is posted with a typical 24" round sign with 12" lettering designating the chemical agent contained within the storage unit. If the storage unit or operational unit do not contain chemical agent, then the respective agent sign is removed.

- Letter “H” designates Mustard (blister) agent.
- Letter “G” designates GB (nerve) agent.
- Letters “VX” designate VX (nerve) agent.

At the entrances of the CLA there are signs that state “Hazardous Waste Storage Area Authorized Personnel Only.” The hazardous waste signs at the CLA entrance is in lieu of placing signs on each HWSU or operations in the CLA.

The CLA is located within BGAD’s ammo restricted area. Within the ammo restricted area, personnel are prohibited from smoking and/or carrying open flame devices such as matches or other flammable items. The use of open flame without a flame permit is prohibited in this area. Smoking within the ammunition area is restricted to designated smoking areas only. With this restriction, the need to place no smoking signs on each HWSU or operations is not considered necessary.

F-2. Inspection Schedule

F-2a. General Inspection Requirements

ACWA will be in charge of the H sampling operation. The H sampling operation will occur within the CLA. BGCA is in charge of the HWSUs (igloos) within the CLA. BGAD’s Environmental Office interacts with ACWA and BGCA’s Environmental Office and has oversight of all hazardous waste-related activities at BGAD, BGCA, ACWA, and BGCAPP (main plant and EDT). The respective Environmental Office does announced and unannounced inspections for environmental compliance for their respective organizational activities.

ACWA/BGCA’s operational personnel participate in the implementation of pre-operational inspections of hazardous waste activities related to their waste generation within the CLA. The responsibilities for pre-operational inspections belong to the generators of waste, with each generator responsible for maintaining familiarity with the operational requirements. Deficiencies are dealt with directly when observed and reported to the appropriate management authority for direction if the issue is programmatic or requires management involvement.

Inspections of the operation's facilities include the inspection of the structure for deterioration and the condition of the operation's secondary containment systems (EE structure, glovebox, and Engineering control system). The current schedule for inspections and results of historic inspections are maintained by Permittee. Records of inspections are maintained by Permittee for a minimum of three years or until clean closure is obtained.

F-2a(1). Types of Problems

Types of problems encountered with each type of equipment are annotated on the inspection schedule in the Table below.

Equipment Type	Description	Types of Problems	Inspection Maintenance Frequency
Air Monitoring for H sampling operations	Low level monitoring equipment	Chemical agent standard not in specified range; equipment inoperative	Before and after use daily
Vehicles	M12A1 Power Driven Decontamination Apparatus	Inoperative	Quarterly
	Forklift Trucks Vehicle preventive maintenance Lift testing	Inoperative Inadequate load capacity	6 months Annually
	EONCs	Inoperative	Daily during Operating Days
Safety and Emergency Equipment	M12A1 Power Driven Decontamination Apparatus	Decon equipment inoperative Missing materials or items, leaks or deterioration	Quarterly
Safety and Emergency Equipment (Cont.)	Self contained breathing apparatus (SCBA)	Inoperative Pressure levels Seals and valves, missing parts	Annually

Equipment Type	Description	Types of Problems	Inspection Maintenance Frequency
	Air Filters	Throughput deterioration	Semi-annual Before, During, and After Use
	Personal Protective Equipment (TAP butyl rubber suits or commercial equivalent)	Deterioration of fabric and/or seal seams	6 Months.
	Fire extinguishers - in vehicles	Not charged	Daily during Operating Days
	Fire pumps and hydrant system	Inoperable	Yearly
	Fire trucks	Inoperable	Weekly
	Emergency Spill Equipment: Broom, dustpan, drum	Not present Deteriorated	Weekly
	First aid equipment and supplies	Expired shelf life. failed to replenish after use	Yearly. After use
	Phone emergency telephone system (red phone system)	Inoperative or malfunctioning	Daily During Operating Days
Security Devices	Perimeter fence	Inoperative or malfunctioning	Twice Daily
Security Devices (cont.)	Backup power generator and lighting	Inoperative or malfunctioning	Weekly

Equipment Type	Description	Types of Problems	Inspection Maintenance Frequency
	Intrusion detection system	Inoperative or malfunctioning	Quarterly
	Warning sirens	Inoperative or malfunctioning	Twice Monthly
EE Unit / System: Glovebox, Engineering Control System	Treatment unit: Sampling of H filled munitions/DOT bottles under engineering controls within EE	Deterioration of EE Unit/system Deterioration of containers, leaks/ vapor emissions.	Each Operational Day

F-2a(2). Frequency of Inspections

The EE will be inspected each operational day. The EE will be air monitored during operations. Air monitoring for agent vapor is conducted in lieu of the RCRA required visual inspections of the containers (munitions). Air monitoring has proven to be an effective early warning tool while adhering to the cardinal principle to limit the potential exposure to a minimum number of personnel, for a minimum period of time, and to a minimum amount of the hazardous material consistent with safe and efficient operations.

F-2b. Specific Process Inspection Requirements

F-2b(1). Container Inspections

Containers with waste stored at the sampling operations generated from the stockpile management operations are visually inspected weekly. N-listed hazardous waste containers within will be air monitored (cleared) to less than 1 Vapor Screening Level (VSL).

F-2c. Remedial Action

In general, corrective actions for all discrepancies and equipment shortfalls are directed to the appropriate operational supervisor, directorates and/or divisions for correction through direct discussion, work order, or memorandum. The observing authority handles concerns that don't require extensive response from other directorates/divisions immediately. Any problems impacting RCRA Permit compliance are reported to Permittee for immediate attention and resolution.

F-2c(1). Leaking Agent Items (Liquid or Vapor Emitting)

When a leaking chemical munition (liquid or vapor emitting) is suspected or detected during visual inspection or air monitoring, the observations are reported immediately to the BGAD/BGCA Operation Center (OC) and contingency plan (CAIRA) operations are implemented. During visual inspections, if evidence of leaking liquid is found in a storage unit, the suspected liquid is tested with M-8 paper to determine the presence of agent. If the liquid is determined to be H, the contaminated area is decontaminated and/or the chemical munition is overpacked. The leaking/vapor emitting chemical munition is located and the pallet containing the leaking/vapor emitting munition is moved to an operation point within the storage unit where the leaking item is then overpacked. The overpacked item will be processed in the EDT system.

Decontamination mixtures are normally applied with dry wipes soaked in the mixture. This minimizes the generation of decontamination waste. Generally, less than one gallon of decontamination mixture is used. After decontamination, the outside of the container is cleaned with a dry wipe or other absorbent material.

The expended decontamination mixture, wipes, pallets, metal strapping, plastic throws, dunnage, and leather gloves are placed in a DOT approved container (typically a 55-gallon drum, but other sizes may be used). Care is taken that the containers selected are compatible for the characteristics of the waste being generated. The DOT container is relocated to a monitoring shed and the contents are air monitored to confirm that the agent detection level is less than 1 VSL for the respective agent. If the contents are not below the necessary level the items are again decontaminated until less than 1 VSL has been reached. The containers are then sealed shut with the appropriate mechanism.

F-2c(2). Grounding Protection System

If deficiencies are noted in the testing of the grounding protection system, the results will be reported to the Facilities Engineering stating location, date inspected, resistance reading, and remarks including corrective actions taken or required. Correction must be made before operations can occur.

F-2c(3). Personal Protective Equipment (PPE)

Deficiencies resulting from the inspection (testing) of PPE (TAP clothing, commercial equivalent clothing, or masks) could trigger repairs to include parts replacement and retesting. If the item cannot pass the prescribed inspection (testing), it is eliminated from further use. A "passed" item replaces the defective unit in inventory or is issued to the chemical worker.

F-2d. Inspection Log

Copies of inspection forms used in association with the hazardous waste management during the H sampling operation will include, at a minimum, the following:

- Date and time of inspection.
- Name/signature of inspector.
- Observations made.
- Comments.
- Remedial action requirements.

F-3 Preparedness and Prevention Requirements

F-3a. Waiver

Hazardous waste management facilities are required to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water, which could threaten human health or the environment. No waiver is sought to alter these requirements.

F-3b. Equipment Requirements

F-3b(1). Internal Communications

Whenever hazardous wastes are being transferred or inspected, a two-way communication device (radio or cellular telephone) is available for the operators to use in the case of an emergency. The OC maintains radio communications with CLA personnel during all operations.

Guards within the CLA routinely carry two-way radios. Workers inside storage units work in pairs and must remain in sight of each other at all times. The respiratory protection masks allow talking. Personnel working inside the storage units with chemical agent are watched by someone outside the unit who is in communication with the OC or security, and is able to report/respond to any problems.

An accident, fire, or explosion will be signaled by an alarm activated by the OC. This

siren is audible throughout BGAD. During a chemical accident/incident emergency, the primary means of continuing communication will be installed radio nets. (The BGAD phone system will serve as the secondary communication system.) The radio nets are frequency modulated. Radio silence is declared except for chemical accident/incident emergency communications traffic.

F-3b(2). External Communications

The guard areas within the CLA are equipped with telephones, which are part of the BGAD telephone system. These telephones can also be used to access locations external to BGAD.

The two-way radio or cellular telephones can be utilized to call the BGAD, BGCA, or ACWA personnel in emergency situations or conditions where additional assistance may be required. These personnel can use permanently installed telephones to:

a. Contact other individuals or groups at BGAD to provide support.
b. Contact Emergency Coordinator if an emergency exists.
c. Contact off-site emergency response groups.

F-3b(3). Emergency Equipment

A fire extinguisher is carried in all vehicles in the restricted area and is available to crewmembers entering HWSUs or operations. There is no water supply on site at BGCA's HWSUs or the H sampling area. They are serviced by the facility fire department. The fire department has a tank truck with a 1,200-gallon capacity. A "brush" truck is available with a 250-gallon capacity. Additionally, there are two fire engine pumpers with a total water capacity of 1,060 gallons.

Spill control equipment includes absorbent (socks or pads), brushes, brooms, and dustpans used to retrieve and containerize any spill contents.

During loading at the H - HWSU within the CLA and unloading and loading at the sampling facility, BGCA's M12A1 decontamination vehicle is on standby for deployment if an emergency occurs. This vehicle maintains a supply of decontamination chemicals necessary for emergency response.

F-3b(4). Water for Fire Control

There is a fire hydrant near the entrance to the CLA and the flow rate of the hydrant is approximately 730 gallons per minute. The hydrant pumps are diesel backups.

F-3c. Aisle Space Requirement

Aisle space is sufficient in the EE to allow for the unobstructed movement of personnel, fire protection equipment (fire extinguishers), spills control equipment, and decontamination equipment to any area where operations in an emergency may arise. Munitions are stored according to Department of Defense (DOD) ammunition requirements.

F-4 Preventive Procedures, Structures, and Equipment

F-4a. Unloading Operations – H Sampling Area within CLA

When the Demil facility is ready to receive the chemical munitions and/or DOT bottles for processing/destruction, they will be transported using an EONC. The EONCs are airtight vessels that are specifically designed to contain munitions during transport from the storage units to the Demil facility. The EONC is a well-established design that has been used safely at the Tooele Chemical Agent Disposal Facility (TOCDF), the Anniston Chemical Agent Disposal Facility (ANCDF), Umatilla Chemical Agent Disposal Facility (UMCDF), and the Pine Bluff Chemical Agent Disposal Facility (PBCDF). The EONC is designed to provide containment of agent, and air monitoring can be performed of the headspace within the EONCs.

Pallet/pallets containing the chemical munitions/items to be processed will be removed from the HWSU and placed/secured onto an EONC tray. The tray with the respective items will be placed within the EONC and the EONC door closed/secured. A tractor trailer will transport the EONC to the Demil facility.

The unloading areas of hazardous waste management areas are graveled or paved for ease of maneuvering. Access of extraneous personnel will be restricted when loading/ unloading chemical munitions or DOT bottles, sampling, or processing. The H sampling operations will occur during daylight hours only.

The chemical munitions are transferred by hand or by forklift to a transport vehicle (EONC). The container and/or pallet(s) are secured in the transport vehicle by cradle, straps, and/or bracing blocks. The transport vehicle moves the items to the designated H sampling facility and to the EDT Facility. The items are removed from the EONC by hand or fork lift and moved into the designated area.

F-4b. Run-Off

The HWSUs and EE in the CLA are secure units designed for explosive materials and operation. All containers are kept closed. The storage units are designed to minimize run-off. Periodic maintenance is required to ensure continued protection. None of the facilities are in flood hazard zones.

F-4c. Water Supplies

BGAD obtains its drinking water from Lake Vega. None of the hazardous waste storage facilities in the CLA drain into the Lake Vega drainage area. All spills would be contained within the storage/operations facility and immediately mitigated to preclude drainage from the storage/operations facility.

F-4d. Equipment and Power Failure

Hazardous waste storage facilities in the CLA are accessible to workers only during daylight hours, thus reducing the impact of power failure on visibility and equipment operation.

There is no electrical power supply to the EE area. The EE area will operate on independent generators.

The security lighting around the area is powered through the BGAD utilities system. There is a back-up generator in the event of a power failure. BGAD/BGCA maintains mobile light sets and electrical generators.

F-4e. Personal Protective Equipment (PPE)

Personnel entering the CLA will either wear or carry a protective mask. For administrative type areas, the mask may be readily available to the wearer instead of in a slung position. Each protective mask carrier is supplied with three Antidote Treatment Nerve Agent Autoinjectors nerve agent (GB or VX) antidote injectors for use in emergency exposure. PPE used during operations is dictated through SOPs for the operation being performed. All PPE is provided to the workers and must be in a serviceable condition and properly fitted to the wearer. Each worker required to wear PPE is given instructions on the care and inspection of each piece of equipment issued.

Potential routes of entry of the agents are through vapor inhalation, ocular, skin absorption, and injection. Operational constraints when using PPE are employed in the CLA and based on the nature of the work performed and the type of protective equipment in use (i.e., butyl rubber suits have a limited wear time based upon ambient air temperatures and humidity to prevent injuries from heat exhaustion). The selection of protective equipment worn throughout operations is determined by a combination of air monitoring levels and mandates of SOPs based upon risk level.

Trained emergency personnel responding to a chemical event (accident or incident) or emergency situation will wear the level of protection that is indicated by the conditions that exist.

F-5 Prevention of Reaction of Ignitable, Reactive, and Incompatible Wastes

F-5a. Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

Hazardous waste areas in the CLA are protected from sources of ignition and/or reaction by restrictions of entry to the CLA of individuals in possession of sources of ignition and the following practices:

- Prohibition of open flames.
- Prohibition of smoking.
- Prohibition of work which generates frictional heat or sparks (electrical, mechanical, or static).
- Prohibition of storage of incompatible wastes in same room or location.
- Proper selection of individual transport and storage containers (design/material).

Wastes are stored in storage units designed to store energetic materials. Storage units are separated by at least 400 feet. Equipment used is spark and explosion resistant. Within the ammo restricted area, personnel are prohibited from smoking and carrying open flame devices such as matches or other flammable items. Gasoline-powered generators are positioned outdoors. Vehicles operating within the ammo restricted area are required to carry fire extinguishers.

Fire control is accomplished through security measures limiting ignition sources in the waste storage area and keeping ground cover minimized. Routine mowing in the CLA keeps the grass controlled and reduces the chance of fire during periods of drought.

F-5b. General Precautions for Handling Ignitable or Reactive Wastes and Mixing of Incompatible Wastes

Only munitions, miscellaneous munitions components, or items containing chemical agent (neat chemical agent [undiluted, full-strength (as manufactured) chemical agent or agent at concentrations above the RDT&E threshold level]) of the same type will be stored/managed in any given HWSU/operations at any one time

There is no mixing of chemical agent munitions/containers (GB, VX, or H) in a storage unit or operations. Only one type of agent munition is stored, processed, tested, and/or treated in a given hazardous waste unit at any one time.

F-5c. Management of Ignitable or Reactive Wastes in Containers

Hazardous waste management areas are more than 50 feet from the BGAD property line.

F-5d. Management of Incompatible Waste in Containers

The H sampling operations will only manage waste from the sampling of H containing items (projectile/DOT bottles). Therefore no incompatible waste will be managed during this operation.

Part G: Contingency Plan [401 KAR 38:090, Section 2(7), 34:040, and 34:190 Section 7 & 40 CFR §264.50-264.56 and 264.196]

Non-agent spills will be remediated by government or contract personnel.

Agent spills within the EE will be remediated by government or contract personnel.

For upset conditions outside engineering controls, Permittee will follow the Contingency Plan as covered in the following Module:

Module III, Part G of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Chemical Storage/Operations, EPA ID # KY8-231-820-105 referenced in the Part B.

Part H: Personnel Training [401 KAR 34:020 Section 7 & 40 CFR §264.16]

H-1 Outline of Training Program

H-1a. General Training

Personnel involved with the handling of chemical munitions/hazardous wastes are required to complete combinations of on-the-job training (OJT) and/or classroom training to ensure they are competent to correctly and safely perform their duties within six months of initial assignment. Personnel who have not received initial training work under the direct supervision of a trained supervisor until completion of OJT and/or classroom training, and are not allowed to work autonomously during the handling of hazardous material.

Training will provide personnel with the necessary knowledge and skills to perform hazardous waste duties safely, efficiently, and in an environmentally sound manner. The training program prepares facility personnel for treatment operations, with emphasis on reducing potential risks to human health or the environment. This is accomplished by ensuring facility personnel handling hazardous waste can properly perform their assigned duties and responsibilities. In addition to providing training in the mechanics of the job functions, this training program provides facility personnel with a thorough understanding of the treatment operations, including the safety and emergency response operations. Refresher training will be conducted as required by environmental regulations or to update workers on new methods or equipment.

This training program meets the RCRA regulatory requirements by:

1. Providing specific training for various hazardous waste management positions.
2. Ensuring all personnel involved in ammunition operations and planning complete the training program prior to being assigned to duties involving ammunitions or explosives.
3. Providing training that ensures facility personnel are able to respond effectively to emergencies.
4. Ensuring facility personnel are trained in hazardous waste management practices.
5. Maintaining required documentation for the Facility.
6. Maintaining training records for Facility personnel for at least three years from the date last worked.

H-1b. Specific Hazardous Waste Management Training

Employee training is crucial to the accomplishment of the missions and the requirement to provide environmental training is a top priority. The Hazardous Waste Management

Training Program (HWMTP) is a formal program designed to enhance the environmental competencies of its participants and to promote responsible environmental practices throughout the organization. This training was developed and implemented for personnel involved in hazardous waste operations (H sampling). Training requirements have been outlined for this training program and contain material for accomplishing these requirements.

The HWMTP has evolved into a comprehensive approach of integrating the requirements to the RCRA, Occupational Safety and Health Act (OSHA), the Installation's (BGAD's) Spill Prevention, Control and Countermeasures Plan, the Chemical Accident/Incident Response and Assistance Plan (CAIRA), and other meaningful training. The primary purpose of the training is to ensure the employees have the skill to perform their assigned duties in a safe manner in order to protect themselves, other employees, the public, and the environment.

40 CFR 264.16(d)(2) requires a written job description for each employee conducting hazardous waste operations. Position (job) descriptions are maintained and available with the respective organization.

Job titles and duties will be consistent with the current duties and responsibilities for safely treating explosive components in accordance with applicable OSHA, RCRA, and military requirements. In general, all personnel working at the EDT Facility will be required to:

1. Demonstrate the ability to understand and apply both oral and written instructions at a level appropriate to the assigned job.
2. Possess the aptitude and attitude necessary to ensure compliance with environmental, safety, and job requirements.
3. Be physically capable of doing the work.

H-2 Scope and Application

Employees receive initial training in Chemical Surety and Hazard Communication. Employees who are involved in managing, storing, and/or handling of hazardous waste including those on temporary appointment, are required to complete hazardous waste management training. The types of duties an employee may engage in when dealing with hazardous waste include, but are not necessarily limited to, engineering, technical work, transportation, containerization, labeling, storage, identification, record keeping, emergency response, and treatment (H sampling).

H-3 Program Administration

H-3a. Recordkeeping/Reports/Documentation

Personnel's training is documented and the appropriate records are maintained with their respective organization. Training records for current employees are kept for three years or until the operation is complete.

Environmental staff or a certified contractor will conduct the RCRA and hazardous waste management training. Training instructors used in the program are subject matter experts in the topic areas of instruction. Environmental Staff periodically attend RCRA and DOT courses to stay current on RCRA and hazardous waste management regulations as they apply to the mission/operations.

H-3b. Job Description

Hazardous waste training for new personnel is initiated when they start work and is normally completed within six months. Personnel are not allowed to work unsupervised until training requirements have been completed. Personnel are not permitted to respond to emergency response situations until training in the appropriate response is completed.

The Hazardous Waste Operations and Emergency Response (HAZWOPER) Training Program is the initial training for those employees that are involved in Hazardous Waste operations and the annual refresher training is 8-hours. New personnel to hazardous waste operations will have successfully completed the training program within six months.

Training Officer or designated site personnel will maintain the following:

1. A list of job titles and positions with the name of each employee filling that position, and

2. A written job description for each position, which lists the required skills and hazardous waste management/handling duties that may be required.

It is the responsibility of the employee's supervisor or director to notify the training officer when an employee is to be added to or removed from the training program.

Generally, RCRA training requirements for 40 CFR Part 265 facility personnel will include the following:

- Elements of BGAD Chemical Accident/Incident Response and Assistance Plan (BGAD-CAIRAP).

- Communications or alarm systems.
- Operating procedures for using, inspecting, and turn-in of facility emergency equipment is conducted during visual inspections. Facility and monitoring equipment is maintained and replaced by Electronics Mechanic personnel
- The use and limitations of PPE.
- Response to fires, explosions, groundwater contamination incidents, and shutdown of operations.

Employees that have been identified as performing hazardous waste duties have that expectation included in their job description. This description of hazardous waste duties may involve one or more of the following: management, coordination, engineering or technical work involving hazardous waste management equipment, programs or projects; and/or movement, containerization, storage, identification, recordkeeping, emergency response, treatment, and/or disposition of hazardous waste. Duties require the ability to interpret and implement environmental regulations, knowledge of hazardous waste products, safety regulations, the skill to effect regulatory requirements, and the ability to ensure proper management and/or handling of hazardous wastes.

H-4 Emergency Response

Emergency response will be handled in accordance with the “Blue Grass Army Depot Installation Spill Contingency Plan (BGAD-ISCP)” and/or the “Blue Grass Army Depot Spill Prevention Control and Countermeasures Plan (BGAD-SPCCP)”. If the accident/incident involves chemical surety material, the “Blue Grass Army Depot Chemical Accident/Incident Response and Assistance Plan (BGAD-CAIRAP)” will be implemented and will take precedence.

H-5 Course Outlines

The training program consists of initial training courses and each having an annual refresher training requirement. The initial courses are as follows:

- Chemical Basic course
- Hazard Communication Course
- RCRA Compliance and Hazardous Waste Management Course
- HAZWOPER.

The training program is a dynamic program that is updated in response to new information and changes in the regulations. Each course outline remains relatively stable but the content is revised as necessary to remain current.

H-6 Chemical Basic Course (Initial and Refresher)

Below is a typical outline of the chemical basic course initial and annual refresher instruction block

H-6a. Chemical Munitions

Descriptions of the different types of chemical munitions and their various configurations including packaging and storage.

H-6b. Chemical Personnel Reliability Program

Identifies the positions that fall under the guidelines of Army Regulation 50-6 and provides a means of assessing the reliability of personnel in these positions.

H-6c. Classification and Effects of Chemical Agents

Describes the types of nerve and blister agents, their physical characteristics, the physiological effects on the body, and the persistency of each agent.

H-6d. Protective Clothing

Reviews protective masks, their proper use and care, and the different types of protective clothing and equipment available for protection from agents.

H-6e. Chemical Agent Alarms/Detectors/Monitors

Describes the alarms for an agent emergency, the types of detection equipment used, and the monitoring methods used to detect and quantify agent concentrations.

H-6f. Self-Aid/First Aid and Decontamination

Discussion of the different decontamination solutions for chemical agents and the proper use of the nerve agent antidote kit. Basic first aid is taught.

H-6g. Chemical Accident/Incident Control

Discussion of the different levels of a chemical event/accident, the response procedures during an incident, and the various teams that respond.

H-7 Hazard Communication Course (Initial and Refresher)

Below is a typical outline of the DOD hazard communication initial and annual refresher instruction block

H-7a. OSHA Hazard Communication Standard

This lesson stresses that employees must be informed about hazardous chemicals in their workplace and be trained to work safely with them.

H-7b. Physical Forms and Exposure Hazards

This lesson discusses the three basic physical forms: solids, liquids, and gases. Types of exposure hazards, which include physical hazards and health hazards, are discussed.

H-7c. Types of Physical and Health Hazards

This lesson discusses physical hazards which are chemicals that cause explosion, fires, violent chemical reactions, or other hazardous situations. Health hazards and chemicals that can cause illness or injury when inhaled, swallowed, or through contact with the skin or eyes are also discussed.

H-7d. Controlling Chemical Hazards

This lesson discusses the basic methods of controlling chemical hazards, which include engineering controls, PPE, and administrative controls.

H-7e. Introduction to Safety Data Sheets (SDSs)/Material Safety Data Sheets (MSDSs) and SDS Physical Hazard Information

This lesson discusses the general layout of an SDS, where to find and understand the information in the physical data section, the fire and explosion hazard section, the reactivity data section, and the precautions for safe handling and use section. The SDS health hazard Information lesson teaches how to find and understand the information in the hazardous ingredients section, the health hazards section, and the control measures section.

H-7f. Using Labels and the Hazardous Chemical Inventory

This lesson discusses labeling requirements. Labels must contain all appropriate hazard warnings. The name must be the same on the label, the MSDS, and the hazardous chemical inventory list. Hazardous chemical inventory lists must be available and kept up to date.

H-8 Hazardous Waste Management Course (Initial and Refresher)

Below is a typical outline of the hazardous waste management initial and annual

refresher instruction block.

H-8a. RCRA, Federal, State, and Army Regulations

This block is a brief overview of various regulations, which also include hazardous materials regulations. Permit background at BGAD, permit training requirements, and the penalties that may be imposed for noncompliance are also discussed. RCRA regulatory, review, and local controls will be covered.

H-8b. Hazardous Waste Identification

This block discusses when a material becomes a solid waste, a hazardous waste, and gives an overview of chemical waste streams (N001, N002, or N003), and requirements of the hazardous waste label.

H-8c. Hazardous Waste Management

The focus here is on managing hazardous waste to include the permitted unit(s), less than 90-day accumulation, and satellite accumulation areas. A description of the information required for Waste Identification and Certification form is used to capture hazardous waste storage information that is presented during this training. Additional record keeping requirements, spill or release notification requirements, the permitted operations, and storage areas and hazardous waste movement between these areas are also covered.

H-8d. Mission Operating Procedures

This lesson discusses the importance of careful application of procedures called out for each activity undertaken in the CLA. Examples of environmental controls incorporated into the SOP are identified and reviewed.

H-8e. Waste Analysis

The lesson topics include the general requirements of the Waste Analysis Plan, hazardous waste characteristics, laboratory certification, and documentation of waste analysis.

H-9 Hazardous Waste Operations Emergency Response Training Program (HAZWOPER) (40 hour initial)

Below is a typical outline of the HAZWOPER initial instruction block.

H-9a. Legal Rights and Responsibilities

The Legal Rights and Responsibilities is a focus on what is hazardous material/waste and the regulatory background is targeted.

H-9b. Hazard Recognition

Hazard recognition including basic principles of toxicology, hazard classes, material identification, placards and labels, chemical incompatibilities, and National Institute for Occupational Safety and Health pocket guide training.

H-9c. Hazard control

Hazard control including types of hazard control, emergency response plans, the incident command system, establishing site security and control, and the medical surveillance program.

H-9d. Work Practices

Work Practices with a focus on SOPs, material handling and transfer, spill control, equipment and vehicle operation, special control equipment, and confined space entry.

H-9e. Personal Protective Equipment (PPE)

Use and limitations of PPE including respirator and self-contained breathing apparatus (SCBA), characteristics and properties of chemical protective clothing (CPC), precautions when wearing CPC, inspection, maintenance and storage of CPC, and exercises in the use of CPC.

H-9f. On-The-Job Training (OJT)

Air Monitoring and environmental sampling including calibration and sampling protocols, with a review of sampling equipment, record keeping, and document control.

H-9g. Decontamination

Decontamination with a focus on the chemicals used and decontamination steps essential to decontamination of equipment, environmental media, and personnel. A decontamination exercise with available decon equipment and waste containerization resources is undertaken with training provided on waste accumulation, marking, and labeling.

H-10 HAZWOPER (8-hour Refresher)

Below is a typical outline of the HAZWOPER annual refresher instruction block. Any facility position (job) titles that participate in the actual clean-up at the incident/accident site will have HAZWOPER.

H-10a. Chemical Basic Course Review

Chemical Munition Review.

H-10b. Hazard Communication

Hazard Communication Course Review.

H-10c. Response to Fires

Response to fires, non-agent spills and explosions inside and outside the CLA, including response to groundwater contamination incidents.

H-10d. Inspection

Inspection, use, repair, and replacement of emergency/monitoring equipment including the EE systems.

H-10e. Emergency Operation Center Communications

Emergency Operation Center Communications and radio alarm system procedures.

H-11 On-the-Job Training (OJT)

Personnel receive OJT based on the individual's job description. The training includes contingency plan implementation, familiarization with emergency procedures, and the methods and equipment applicable to the employee's work area. The training includes training on applicable SOPs, Letters of Instruction, and Internal Operating Procedures. At regular intervals employees must review and confirm that they have read and understand the procedures outlined in each SOP applicable to their duties. Additional OJT occurs when a new hazardous material is introduced to the work place or a new procedure is implemented. Credit for completion of chemical exercises or operations can be utilized as training credited for the annual HAZWOPER refresher when proper records are maintained. Chemical or CAIRA/CSEPP exercises conducted annually incorporate the following elements into the drills as per OSHA 1910.120: Structure of authority, training and communication, evacuation routes and procedures, use of PPE, decontamination processes, emergency medical treatment and emergency alarm procedures.

Part I Closure Plans, Post Closure Plans, and Financial Requirements

[401 KAR 34:070 Sections 2-6; 34:080 Section 2(3); 34:180 Section 9; 34:190 Section 8; 34:250 Section 2: and 40 CFR 264. 111-115, 264.178, and 264.601]

This closure plan specifies performance standards and describes procedures for the closure of the treaty sampling site. The closure performance standards are designed to minimize the need for further maintenance by removing all hazardous waste and hazardous waste constituents from the treaty sampling site. The closure plan is also designed to provide closure in a manner that will control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to surface water, groundwater, or the atmosphere.

There are no permitted container storage areas, tanks, waste piles, surface impoundments, incinerators, landfills, land treatment, or subpart X units, therefore closure requirements for the listed types of hazardous waste management units above are not applicable.

I-1. Closure Plan

The end state of the treaty sampling site is that all ECBC equipment/structures will be decontaminated and returned to ECBC, and the site will be returned to the condition it was prior to treaty sampling operations. During treaty sampling operations any identified hazardous waste spill will be remediated and containerized immediately. Records of all spills will be recorded in an operating record. Soil sampling will only be required if there is a documented release of hazardous waste outside of engineering controls.

I-1a. Closure Performance Standards

This Closure Plan specifies performance standards and describes procedures for the closure of the treaty sampling site. This closure plan is designed to provide for closure in a manner that will:

- Minimize the need for further maintenance.
- Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the post-closure escape of hazardous waste and hazardous waste decomposition products to surface water, groundwater, or the atmosphere.

There will be no partial closure of the site. Final closure will accomplish the goals of the closure performance standards, noted above by: (1) completing all treaty sampling operations, and (2) removing or decontaminating all equipment, bases, structures, or other materials containing or contaminated with hazardous waste or hazardous

constituents associated with the treaty sampling operation, (3) disposing of all hazardous waste IAW Section D-12f, and (4) returning all equipment and structures to ECBC.

Post-closure maintenance or monitoring is not anticipated since no hazardous wastes or hazardous constituents are expected to remain above restricted use clean closure target levels following final closure.

After final closure, certification, and acceptance of closure by the KDEP, the area will not be classified as a hazardous waste management unit.

I-1b. Closure Activities

All treaty sampling operations will take place within a glovebox, which is designed to prevent vapor or liquid leaks. Anything removed from the glovebox will be decontaminated and monitored prior to being removed, therefore the EE will likely not be contaminated unless there is an agent vapor or liquid leak outside the glovebox. In the case that there is a leak outside of the glovebox, the EE is designed to prevent any vapor or liquid release to the environment. All liquid agent inside the glovebox or EE will be decontaminated and removed during the sampling operation. Any spill of liquid agent outside of engineering controls will be remediated immediately.

If there is no evidence or record of a liquid spill outside of engineering controls in the operating record, closure will be limited to decontamination and removal of the ECBC equipment and structures.

Upon completion of operations, all hazardous waste and hazardous waste residues will be removed. The glovebox, EE, PDS, and ECBC onsite laboratory will be decontaminated using an appropriate decontamination solution. Once monitoring indicates that these structures are less than the WPL, the carbon will be removed from the carbon filter units and the filter housing will be decontaminated and monitored to less than the WPL. All ECBC equipment and structures will then be removed from BGAD and returned to ECBC in Maryland. Closure wastes will be collected in containers at a hazardous waste storage area (SAA and/or a less than 90 day storage) located at the site. Agent contaminated wastes carry the Commonwealth of Kentucky hazardous waste number - N003. Agent headspace monitoring or generator knowledge will be used for characterization. Containers will be transported to HWSU LO for disposal IAW BGAD Module III, Section D-1 of the Chemical Storage Permit Application.

In the unlikely event that there is a liquid agent spill outside of engineering controls to the environment, a soil sampling plan will be developed to verify clean closure.

A closure report will be prepared and a Certification of Closure submitted to KDEP.

I-1c. Maximum Waste Inventory

The maximum amount of H agent at the treaty sampling site at closure will be zero. Secondary wastes generated during treaty sampling operations and closure will be collected in containers at a hazardous waste storage area (SAA and/or a less than 90 day storage) located at the site. Agent contaminated wastes carry the Commonwealth of Kentucky hazardous waste number - N003. Agent headspace monitoring or generator knowledge will be used for characterization. Containers will be transported to HWSU LO for disposal IAW BGAD Module III, Section D-1a of the Chemical Storage Permit Application.

I-1d. Schedule for Closure

Closure is scheduled to begin within 15 work days after PEO ACWA approves the sample analysis of the last treaty item. Closure is expected to be completed within 15 work days.

I-1e. Amendment to the Plan

Personnel will notify KDEP and amend the closure plan if unexpected events occur during closure plan implementation which requires a modification to the approved closure plan.

I-1f. Certification of Closure

Within 60 days of completion of final closure procedures, a certification will be signed by a professional engineer and then submitted by the Permittee that the treaty sampling site has been closed in accordance with the closure plan and all applicable regulations. Since there are no regulated disposal units, only certification of final closure of the facility will be submitted.

I-2. Post Closure Plan

The treaty sampling site is not a disposal site and any residual hazardous contamination will be removed prior to closure, therefore a post-closure plan is not required.

I-3. Financial Requirements

I-3a. Closure Cost Estimate

Not applicable; BGAD is a Federal Facility.

I-3b. Financial Assurance Mechanism for Closure

Not applicable; BGAD is a Federal Facility.

I-3c. Post Closure Cost Estimate

No post closure plan is required; therefore, no post closure estimate is required.

I-3d. Financial Assurance Mechanisms for Post Closure Care

No post closure plan is required; therefore, no financial assurance mechanism for post closure care is required.

I-3e. Liability Requirements

Not applicable; BGAD is a Federal Facility.

Part J: Other Federal Laws

Permittee will follow other applicable Federal Laws as identified in the following Module:

Module II, Part J of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Conventional Munition Related Items, EPA ID # KY8-231-820-105 referenced in the Part B.

Part K: Waste Minimization [401 KAR 38:090 Section 2(23) and 38:030 Section 1 & 40 CFR §270.30]

Permittee will follow the Waste Minimization as identified in the following Modules:

a. Module II, Part K of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Conventional Munition Related Items, EPA ID # KY8-231-820-105 referenced in the Part B.

b. Module III, Part K of the BGAD Hazardous Waste Facility Permit, RCRA Hazardous Waste Storage Permit Renewal Application for Chemical Storage/Operations, EPA ID # KY8-231-820-105 referenced in the Part B.

Part L: Signatures [401 KAR 38:070 Section 7 & 40 CFR §270.11]

"I certify under penalty of law that this document (Class 2 Hazardous Waste Storage & Treatment Permit Modification Request, Treaty Sampling Operations, Mustard Agent (H) Items for the Blue Grass Chemical Agent-Destruction Pilot Plant Blue Grass Army Depot, Richmond, Kentucky, dated 2 November, 2015) and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations."

Jeffrey L. Brubaker
Site Project Manager
Assembled Chemical Weapons Alternatives
Blue Grass Chemical Agent-Destruction Pilot Plant
Operator

Colonel Lee G. Hudson
Commander
Blue Grass Army Depot
Owner